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July, 1916

MOTOR BOATING

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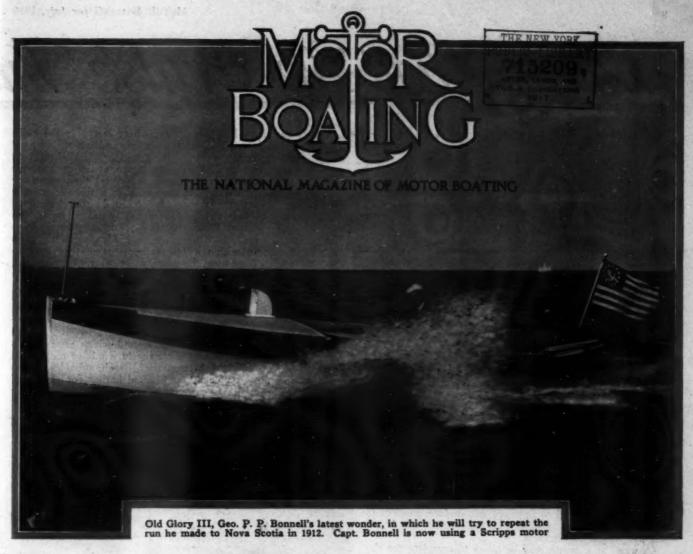
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Where Shall We Cruise This Summer?

Long Island Sound, One of the Best and Most Popular of Protected Waters— The Seventh Article of the Series Descriptive of Cruising Possibilities

By Alfred F. Loomis

F the many attractive cruising grounds in Eastern waters, the one closest at hand, because of its proximity, should not be forgotten. Propinquity, however, does not form the only fascination of Long Island Sound for the thousands of motor boat owners who live along its shores, for this great body of water affords a variety of attractions hardly to be equaled by any paradise of the motor boatman. For those who prefer speed and are fortunate enough to possess it, there is a straight unobstructed course of over one hundred miles at their disposal, while to those who are of an explorative turn of mind, there are one hundred and one

harbors on the Connecticut shore and on the north shore of Long Island which differ each from the other in general characteristics, and which run the gamut from densely popu-

ing that of the isolated Carolina coves back of Cape Hatteras. Something over 50,000 motor boats have their anchorage in New York Harbor and the western end of Long Island Sound, and the owners of many of these have gathered them-Sound, and the owners of many of these have gathered them-selves into more than half a hundred clubs whose doors stand hospitably open to the visitor from North or South. Inter-club races form one of the features of water life around New York City, and two of the more important of the annual rac-ing fixtures have made Cornfield Lightship and Stratford Shoals famous wherever the gasoline motor throbs in harmony with the pulsating heart of the Corinthian.

It is not, however, the clubs nor the races, but the sparkling waters of the Sound itself which endear it to the cruising motor boatists. No boats are too large and none too small to cruise the Sound with perfect safety



Dagmar, a 25-foot x 5-foot 6-inch runabout powered with a four-cylinder, 18 h.p. Wisconsin motor, recently built for W. T. Daly, of the Locus Point Yacht Club. A three-bladed 14 x 18-inch propeller is turned 1,250 r.p.m., which is said to give the boat a speed of 16 miles per hour—a quite remarkable showing when it is considered that the outfit weighs fully 1,800 pounds

-Where Shall We Cruise This

next harb Cup bid eration easte of b

next harbor is Manhasset Bay, where last year the Gold Cup bid farewell to eastern waters, and where for generations sailing vessels have found a safe shelter from easterly winds. Port Washington, at the eastern arm of the bay, is the home of several thriving motor boat clubs, and is the center of a summer boating community which musters in its roll the names of two or three hundred boats. The bay is buoyed where necessary, but deep water prevails, and there are no hidden rocks right up to within a few fathoms from the shore to discomfort the unwary navigator. Gasoline and supplies of all kinds may be obtained at the public wharf.

Next in order on the eastern course is Hempstead Harbor, a large triangular indentation on the Long Island shore, which is four miles across at the entrance between Prospect Point and Matinicock, and which affords protection in all but northerly winds to the largest vessel and, between Bar Beach, provides an almost completely land-locked harbor for vessels of lesser draft. Approaching it from Manhasset Bay

Indian Harbor Yacht Club at Greenwich, Conn.

due attention is paid to ordinary sub-surface menaces to navigation, and on the other that the weather eye is not allowed to lose its keenness.

A week or a month may be taken to complete the circuit of Long Island Sound, so I shall not here attempt to lay down an itinerary of any sort, merely pointing out some of the more important bays and harbors and leaving the reader to select the ones he prefers and to apportion the time to be spent in them. The Battery is the logical starting point for such a circuit for boats hailing from

inland ports, north, west and south, although vessels from the upper New England States will naturally pick up their cruise from the eastern end. Rounding the lower end of Manhattan Island and dodging ferries to the best of one's ability, the course lies up the East River, through treacherous Hell Gate and beyond



treacherous Hell
Gate and beyond
until Throgs Neck
lies abeam. Off on the starboard bow is the west-

lies abeam. Off on the starboard bow is the westernmost harbor on the north shore of Long Island, and as one swings around Willets Point he sees the many attractive summer residences which line the shores of Little Neck Bay. About a mile wide at its mouth and nearly two miles long, the shores of Little Neck Bay are dotted with many private boat landings, and while it is not likely that supplies will be needed so early in the game, gasoline may be obtained, and there is a haven where repairs may be made on the east fork of the bay, accessible to light draft boats.

Pursuing the course to eastward and making out in the fairway to clear Stepping Stones Light, the

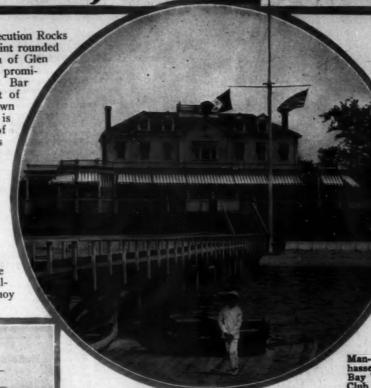


Chart of Long Island Sound, showing the principal

Summer. Nº7 Long Island Sound

the buoy off Sands Point is left to starboard, Execution Rocks passed to port and the bell buoy off Prospect Point rounded for a practically straight course in the direction of Glen Cove Landing. Adjacent landmarks are quite prominent and navigation of this harbor up to Bar Beach is exceedingly simple. Beyond this spit of sand a dredged channel leads up to the Roslyn town wharf at the head of navigation. This old town is one of the most attractive on the north shore of Long Island, and with its vine-covered houses perched on the steep sides of the hill to eastward of the bay has a distinctly old-world feeling. To the north of it is Sea Cliff, the point of embarkation by ferry for New Rochelle and Rye, and a sight of the motor cars making their way down the precipitous hill to the wharf will cause the motor boatman to thank his lucky stars that he does not have to deal with brakes

Six miles ENE of Matinicock Point is the can buoy off Oyster Bay, from which point the whole of Cold Spring Harbor is opened to view. For shallow draft boats it is not necessary to clear this buoy



for the light off Lloyd Beach, as there is sufficient water at any but the lowest tides over the shoals lying off Center Island. However, there are rocks in the vicinity of Center Island Point which prevent the careful navigator from keeping close to shore. Oyster Bay Harbor, which is the west arm of Oyster Bay, is generally of shallow depth, but is of sufficient extent to be well worth visiting. From its waters may be seen the red-roofed home on Sagamore Hill of the most famous citizen of Oyster Bay and immediate vicinity. Cold Spring Harbor, the eastern arm of the bay, was formerly a whaling port of considerable importance, and although devoted to other uses, a few buildings where the boiling-down process was effected are still standing, while a worm-eaten hulk or two lying half submerged are reminders of the passing of the commercial

submerged are reminders of the passing of the commercial sailing vessel. If the motor boat visitor wishes to stretch his legs a little he will be repaid by a visit to the Government fish hatchery at the head of the harbor or by a stroll beside the string of fresh water ponds on the road to Cold Spring station.

Although Lloyd Harbor is separated from Oyster Bay (Continued on page 49)

Orient Point Light, a fixed red which marks the eastern entrance to Long Island Sound





aids to navigation. Scale: Ten miles to the inch

Kerosene

A Symposium of the on the Market Which Are Heavier Than Gasoline-Vaporizing Attach

The 20th Century motor, showing the new kerosene vaporizer

The 20th Century motor, showing the new kerosene vaporizer

bustion experts for many years, for in kerosene has been one which has received a large part of the attention of internal commedium between the heavy weight of Diesel motors and the high price of gasoline. This season the study of the problems which attend the use of the cheaper fuel has received an added impetus, and there are few engine concerns who are not keeping their engineering staffs busy on kerosene manifolds, vaporizers, or what not.

The fuel question has always agitated the motor boatmen of foreign countries more than it has us, because with them the freightage cost of several thousand miles has been put up to the ultimate consumer; and American manufacturers have not been slow in supplying the market so created with motors which operate successfully on the cheaper kerosene. Since the war began, however, enthusiasts in this country have commenced to feel the pinch themselves, and a good many of them have been thankful for the manufacturing progress so far made in this direction.

Although in its present state of development not as satisfactory as the gasoline motor, the kerosene engine is sufficiently perfected to make its use in many ways, particularly in commercial craft, of undoubted benefit. It is not to be denied, of course, that the odor of kerosene is objectionable to many people, and that its oiliness will not improve the upholstery of a high-grade boat if the two come together, but your motor ferryman, your oysterman, your feighter and your

when operating on kero-sene, and that certain prob-lems must be mastered in order to achieve perfect success with this fuel. On open base models either a special manifold can be at-tached or a special car-bureter with fittings can be used.

There are separate carbureters for gasoline and kerosene, and a throttle for each carbureter connected to separate throttle control levers. From the carbureter the kerosene mixture goes to a chamber heated by the exhaust manifold where the process of thorough vaporization is completed. During this process of heating, fresh water is admitted by means of a special valve, the amount of water visible to the operator. This water introduction is stated to prevent the formation of a stated to prevent the formation of carbon on the walls and to retard combus-Buffalo 1

The Kahlenberg has two in-dependent fuel systems

reter side of the Knex

state that thousands of them are all parts of the world. While the evice has been improved from time principle has been used—that of ed intake and exhaust manifold. vaporize fuel testing as low as 50 It is, of course, necessary to use ing, so that the engine may become



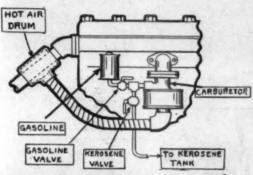
Motors

Many Marine Engines Now Capable of Burning Fuels Descriptions of the ments Used

tugboat captain, generally leave the luxuries of life at home and do not intrude them upon a strictly business proposition. Economically speaking, the use of kerosene presents a clear advantage measurable by the difference in cost between it and gasoline, for the developed power is, to all practical purposes, identical with both fuels.

The chief obstacle to the more general use of kerosene motors in the present stage of their advancement is the practical impossibility of starting them on their intended fuel, and this inherent disadvantage might well militate against their being taken up by the speedster motor boatman who likes to hop into his craft at the float and be half a mile down the bay before he has settled himself at the wheel. This again is no deterrent to the commercial owner who conducts his business not for personal comfort, but for dollars and cents.

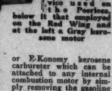
On these two pages will be found illustrations and short descriptions of upwards of a score of motors capable of being operated on kerosene, whose manufacturers claim for them distinct success. The principle at present most extensively followed for making standard motors operable on the less volatile fuel is that of applying heat in some form to the carbureter or intake manifold in order more thoroughly to vaporize the incoming mixture. The construction of the various devices, however, is taken up more specifically below, and the reader will be able to judge for himself the methods used and the results obtainable.



of the Universal keresene attachment and (in quare below) a close-up view of the Buffale

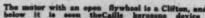
tion, thereby allowing the gases to expand during the full length of the power

Caille





For the last eight years or more the Camden Anchor-ockland Machine Co., of Camden, Mc., has been ex-rimenting with kerosene fuel in connection with ternal combustion motors, and as a result of its ork it is now placing on the market the Knox E-K











WIRELESS fog and storm signal for the warship, the ocean liner or the smaller craft is the very latest invention for marine use, having just been perfected and patented by Earl C. Hanson, a youth of Los Angeles, Cal., after ten years of toil and experimenting. On the Pacific Ocean alone it is claimed that one boat a day is lost through collision or running upon rocks and other danger points, and when we hear of these unfortunate events we naturally think that something ought to be done to prevent them. This is just what this youth thought when a boy of only twelve years, and deciding then and there that wireless was the agency through which or by which these undesirable occurrences could be done away with, he immediately started to find a way out. So successful has he been that even officials of the United States Government have been brought to attention

By Albert Marple

The principal parts about this wireless de-vice are a wireless telephone and a rotary contact breaker, both of which have been invented by Mr. Hanson. In operation the signal is not complicated. It is, like other wireless devices, operated from a storage bat-tery, and from this battery the electrical current passes to and through the rotary contact breaker, which is propelled by a contact breaker, which is propelled by a one-sixth h. p. electric motor, continuing to the wireless telephone. After leaving the telephone it passes through a heavy cable and on to the aerial. By using the rotary contact breaker, which is placed with the other parts of the wireless apparatus upon the bridge of the vessel carrying it, instead of the transmitters the device sends instead of the transmitters, the device sends out electrical waves which may be regulated from a low buzzing sound to a high-pitched whistle. These are instantly caught by the receiving station, equipped with a gaseous amplifier, on the approaching boat the moment that that vessel comes within the radius of that that the radius of the sending apparatus. As each boat is equipped with one of the combined sending and receiving stations, the moment the ships come within a specified distance of each other the officer on each becomes aware of the proxim-

ity of the other. The instruments may be so set that their radius is 100 yards, or a mile, or even farther. As the boats continue to draw nearer the tones sent out by each instrument regis-ter louder and louder in the re-ceiver of the op-

posing device.
Should the vessel become enveloped in a dense fog or be over-taken by a heavy storm, the officer takes his place upon the bridge before the wireless signal device, adjusts the head receivers and Barl C. Hanson, the inventor, operating his combined fog signal and sea tele-phone. The tuning device at the side of the instrument regulates the electric wave lengths

Fog stations of this wireless

type are not confined to use on vessels. They may be located at danger points along the shore, upon piers, etc., and being so situated could warn pilots of boats to stay away. This system would be of especial value to vessels entering or leaving a harbor at night, during a (Continued on page 50)

Small metal plugs on the rotary contact breaker form the "dashes" of the fog signal

The sending part of the new fog signal is arranged with three distinct tele-phone transmitters in order to in-crease the volume of sound

starts the motor which propels the rotary contact breaker. So long as he detects no contact breaker. So long as he detects no buzzing or whistling sound in the receiver, officers on all other boats in that region having done likewise, he knows that there is no danger from collision, but should the buzzing tone be heard the officer is put instantly upon the alert.

Bringing Out a New Model

The Large Amount of Work Involved, the Disarrangement of the Factory Schedule, and Among Other Things, the Great Expense Which Such a Project Entails-Interesting Cost Figures

By H. G. Diefendorf

FEW laymen have any conception of the cost of developing new engines, while most manufacturers know only too well how quickly a year's profit can be entirely abed in designing and equipping for a new model. Probably every manufacturer of marine engines has more models in his line than he can economically build, and, no doubt, would be only too glad to drop several entirely.

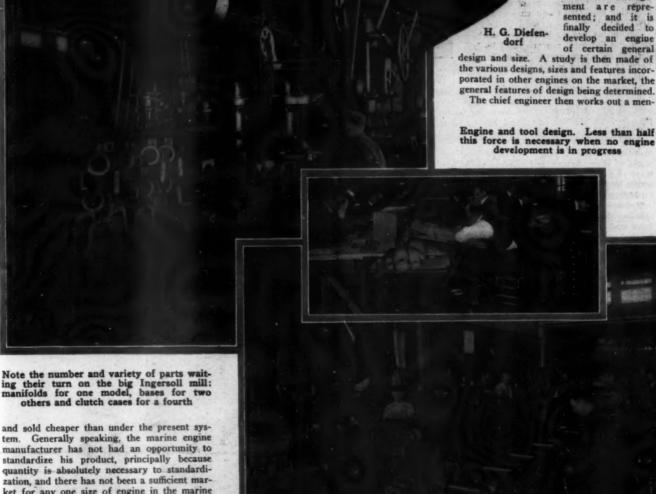
He has been forced to retain old models and sizes and continually to add new ones in an endeavor to meet every demand of the motor boating public. If he could specialize on one, two or three sizes and build large quantities, they could be manufactured better

sales volume more sizes and models were sales volume more sizes and models were necessary. As a result a great number of various sizes and types have been manufactured and, except in a few instances, the sales have not been large enough to obtain anywhere near the manufacturing economy that could be attained were the quantities several times what they have

The cost of developing a new model to the point of actual manufacture is probfar greater than is realized by ably far greater than is realized by the general public; and, as this cost must be spread over the sales, it is evident that the more of one model turned out each year, the cheaper the price can be made. A new mouch usually has its in-ception in the sales department, which is in touch with the demands of the A new model demands of the trade and which in-dicates from time to time that an engine of a certain size or type would probably sell well. When the demand for a new model has become apparent, the problem is usually discussed pro and con in several meetings in which the sales and engineering departments and the manage ment are repre-sented; and it is finally decided to

the various designs, sizes and features incor-porated in other engines on the market, the general features of design being determined. The chief engineer then works out a men-

Engine and tool design. Less than half this force is necessary when no engine development is in progress



and sold cheaper than under the present system. Generally speaking, the marine engine manufacturer has not had an opportunity to standardize his product, principally because

quantity is absolutely necessary to standardi-zation, and there has not been a sufficient mar-ket for any one size of engine in the marine field to give sufficient volume of business for standardization and economical production.

When the marine engine industry was in its early infancy many of the manufacturing entering business started out companies then with the well-defined policy of building only two or three sizes of engines—these generally having the same bore and stroke and being merely a duplication or triplication of the number of cylinders. If this policy could have been adhered to in the main and sufficient quantity business obtained in these few sizes, it would have been a wonderfully economical manufacturing proposition. But it soon became evident that in order to get a large

Assembling several models side by side. At least six different models or sizes are shown in process—how much easier, quicker and cheaper if these men were working on just one model!

tal picture of the engine. Sometimes he has outline drawings made of various features to decide whether an L. T or overhead-valve motor is desirable. The oiling system is

discussed; the camshaft drive determined, and other features settled upon before the actual layout by the draftsmen is started.

After the general construction has been decided upon, the chief engineer turns the rough sketch over to his draftsmen and a general layout of the engine is made. Features are discussed as the work advances and after the layout has been finished and all interferences worked out and details perfected, the detailed working drawings are made.

As the detailed drawings are completed, blue-prints are turned over to the pattern shop and cheap pine patterns are made. The foundry makes from these four or five sets of castings. Hammered crankshafts are ordered, camshafts are usually turned out of solid steel, connecting rods are made of cast steel, and the bushings are usually poured.

In the meantime the purchasing department receives several sets of prints and sends them out to a half dozen or more different foundries, forge shops, and die castings works for figures on these parts. In the interim, however, the parts for the experimental engines are coming in and are being machined to dimensions as they are received.

Blue-prints are made for the machine shop and the parts are machined by laying out each part, as no jigs or fixtures have as yet been made for the engine. The experimental engines are then assembled and tested, tested, tested.

By this time the tool designers have been started at work. They have the blue-prints of the various parts, and having seen the experimental castings, they start work designing tools, jigs and fixtures with which to manufacture this engine. Drawings must be made of every fixture, and patterns made for most of them; and, as the steel and cast iron comes in, the tool room immediately gets busy on building the fixtures.

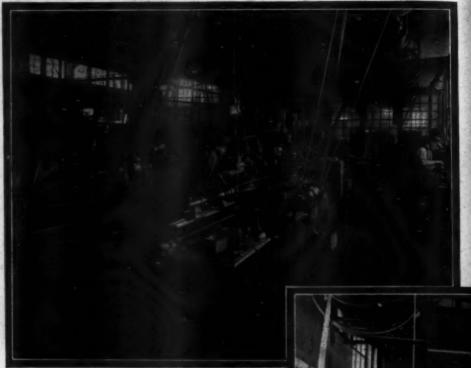
By now the experimental proven their worth; changes have undoubtedly been made in many instances, which frequently necessitate small changes in the tools; but after the experimental engines have proven up, the pattern shop again gets busy on making permanent metal and brass-bound mahogany patterns for quantity produc-

The purchasing department has meanwhile received its bids on the material and all changes having been made, the orders for the manufacturing quantities are placed. The forge and die casting shops start making dies, the stamping works prepare dies for the various stampings, and the permanent patterns are rushed through the pattern shop and to the foundry.

All this work so far has been preliminary to actual manufacture, and each experimental engine represents an outlay many times that which the actual manufactured engines will cost at the end of a six months' period. It is difficult for one not intimately acquainted with machine shop practice to realize to what extent this cost can run up and how this work of laying out and building

experimental engines breaks into and increases the cost of the regularly manufactured line of engines which is being pushed use of these tools—often an intricate task.

The assembly department is not so greatly affected as the machine department in bring-



If large quantities of one model were being made, some of the automatic machines shown in this picture and the one opposite could be dispensed with

through the factory at the same time. After castings and forgings have been received and the tools are finished, it is necessary to get the tools in proper operating condition. In a great many cases it is necessary to make slight alterations in tools when they are put into actual service, and it requires the attention of the machine shop foreman, the various "set-up" men and the chief tool designer to instruct the operators in the



Grinding camshafts is a delicate job. Each model requires a separate set of fixtures



The capacity of these automatic machines is impaired when they are operated on short runs

development to a dollars and cents basis, the reader would no doubt obtain a more exact and concrete idea of what it actually means to develop a new model. The following figures—some of which are taken from the cost records of the Gray Motor Company and (Continued on page 50)



The tool room, like the drafting department, can be operated at much less cost when no new models are being tooled up for

ing out a new engine, although at first there is difficulty in assembling the experimental models, as they may not go together with the case and smoothness of completely jigged engines. Then, too, even after the interchangeable parts manufactured on jigs begin coming through, the assemblers must become accustomed to building this new type of engine and must learn the easiest and quickest ways of putting it together.

By reducing all these factors of design and

Heat treatment of steels has become essential in the present day motor. The wide variety of parts requiring varying treatments necessitates several furnaces, oil baths, etc.





Whippet

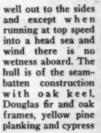
A 26-Mile Cruiser Having Roomy Covered Cockpit and Two Comfortable Compartments Below

PROBABLY the first of the 1916 crop of Preally fast motor cruisers to go into commission was Whippet, built by the Greenport Basin & Construction Co., of Greenport, L. I., and delivered to her owner, O. G. Jennings, after her trial trips in the first week of April. Whippet is an express in the true sense of the word, for her speed clings around 26 miles an hour for sustained periods and in weather which can be described as nothing less than rough. She is a cruiser too, for her ac-commodations include a comfortable stateroom commodations include a comfortable stateroom forward and a main cabin with galley aft in addition to a large and roomy cockpit which is protected by a top that may be almost entirely enclosed or left open as desired.

Designed by James W. Hussey, of the Greenport company, Whippet is 60 feet long by a beam of 10-feet and a draft of a little less

than 3 feet. Her underbody is of the modified concave V type with flat sections aft, giving her a strong tendency to rise and plane on top of the water at speed. The spray is thrown

Looking aft in the cockpit





The high crown to the forward deck, increasing the headroom in the state-room, is a feature of Whippet

decks. The interior finish is in white enamel. Although of good cruising accommodations Whippet is intended primarily for a day boat, and especial attention was directed to the design of the central cockpit to make it roomy and attractive. The front windows of the cockpit hinge out so that a full current of air may be allowed to flow through it when desired, and the side windows drop into pock-

Under the cockpit floor is room for the stow-age of bags and trunks, and directly aft of this storeroom comes the engine compartment in which are installed two eight-cylinder Van Blerck motors of the new 6 x 6-inch measure-ments. These motors are completely equipped with electric starting and lighting outfits, and are fed from two riveted gasoline tanks having a total capacity of 450 gallons.

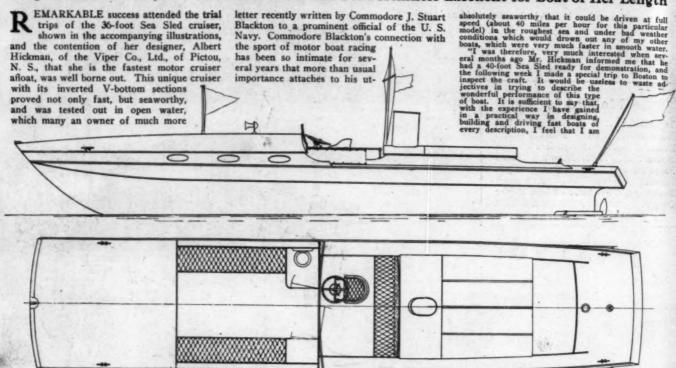


In the engine-room are installed two eight-cylinder Van Blercks with complete electrical



The First Sea Sled Cruiser

Trial Trips of the 36-Foot Viper-Type Cruising Motor Boat Prove Her Possessed of the Speed of a Torpedo Boat Destroyer-Accommodations and Seaworthiness Excellent for Boat of Her Length



Outboard profile and arrangement of the new cruiser Sea Sled, designed by Albert Hickman and built by the Murray & Tregurtha Co.

Two 175 h.p. Van Blercks give a speed of 34 m.p.h.

sizable craft would consider too tumultuous

sizable craft would consider too tumultuous for his peace of mind.

To a 36-foot length this Sea Sled has a beam of 8 feet, and its weight, with crew and fuel aboard, is slightly more than six tons. It is equipped with two 5½ x 6-inch Van Blerck motors turning up to 1,400 r.p.m. and developing 175 h.p. each at that speed. The boat speed attained on the trials was a trifle over 34 m.p.h. over 34 m.p.h.

The layout comprises an owner's stateroom 9 feet long abaft the forward bulkhead; a main central cockpit 6 feet in length; the main central cockpit o feet in length; themotor compartment aft of this, 8 feet in
length, and the engineer's cockpit, which may
also be used for stowage, following the motor
compartment. The fuel tank is placed beneath
the short after deck. The Murray & Tregurtha Co., of South Boston, Mass., built the
boat for a Chicago yachtsman.

We may, therefore, be pardoned terances. for printing the letter verbatim:

"My dear -

"The subject matter of this letter is the development of high-powered, seagoing motor boats, a sport in which I have had perhaps more practical experience than any man in America. During the past seven years, purely in the interests of sport, I have developed racing motor boats to the extent that the speed of a 20-foot boat has been increased from 22 miles an hour, which was the record when I commenced, to close upon 60 miles an hour for a boat of the same size. The actual official records made by two of my boats were 54.2 miles per hour, and 56.8 miles per hour. These boats, however, could make this speed only in smooth water, and like all other hydroplanes or small high-powered boats, were entirely useless in a seaway at any speed over 25 miles per hour. "Two years ago I had built for me a boat of the Sea Sled type invented by Albert Hickman. This boat was of a peculiar design, having an inverted V-bottom and driven by surface propellers. It was not as fast as my step hydroplanes, owing to the fact that this particular boat was more heavily built for the power it carried, but I discovered that it was so

in a position to speak with some authority and I am convinced that no boat of the ordinary V-bottom, or monoplane or step hydroplane type, could have remained right side up if driven through a heavy sea at anything approaching the speed attained by this Sea Sled in its demonstration to me off Boston Harbor. Subsequently, I sent Robert W. Edgren, sporting editor of the Evening World, a man of great experience in motor boats, and who has driven one of my boats in many races during the past seasons, to inspect the Hickman Sea Sled. His views coincide with mine that the boat is absolutely unique and in a class entirely by itself.

"I have not the slighest personal or financial interest in this matter outside of a great desire to see some of our coast towns, and especially, New York Harbor, protected by a number of these very wonderful and efficient boats, equipped with torpedoes and rapid fire guns. I believe a dozen of these boat would not equal that of one first-class submarine.

"Very truly yours,

(Signed)

Mr. Edgren has included an interesting account of his experiences on his first trip on a Sea Sled in a letter to Mr. Blackton, and the communication more than backs up the communication more than backs up the communication more than backs up the commodore's remarks on the subject. The day on which his trial trip was made was excessively rough, but the spin was comfortably run.





bow with the owner's quarters aft. The forecastle may be entered by a companionway, but is also connected with the engine-room which follows immediately aft. In the motor compartment are installed two 60 h.p. iour-cylinder Craig engines which give the boat a speed of from 12 to 14 miles per hour. An electric light-ing outfit is also provided in this compartment which is further fitted with a pipe berth and the usual equipment.

The galley follows the engine-room and aft of this is the large main saloon arranged with transom berths. The owner's double stateroom follows and the interior layout is completed by a single stateroom and bath.

There is a small deck-house forward in which meals are served, and this house has a companionway

this house has a companionway through the passage abreast of the galley, and also an entrance from the deck on the port side.

Arval has a length of 75 feet over all by a 14-foot beam and a 6-foot draft. She is owned by L. F. Percival, of Marblehead, Mass.

The engine-room forward is equipped with two 60 h.p. Crair engines which give a speed of 14 m.p.h.

Mallard is easily handled, all motor controls being brought to the cockpit, and may be managed with the aid of one paid hand

MALLARD is a successful auxiliary schooner designed by B. B. Crownin-shield, of Boston, Mass., and built by Rice Bros., of East Boothbay, Me. Her owner, Frank O. Dean, of Taunton, Mass., has used her extensively on the Massachusetts and Maine coasts, and she has proved herself an excellent cruiser in all weathers, being able

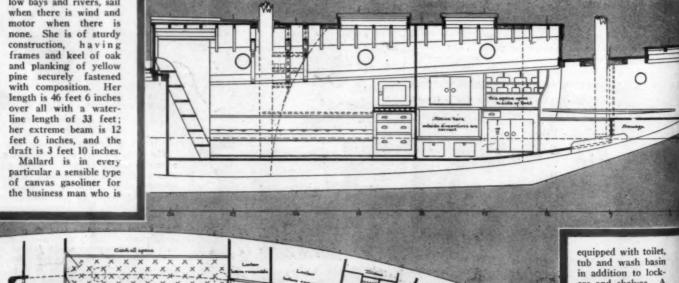
to go to sea and get back, navigate the shallow bays and rivers, sail construction, having frames and keel of oak

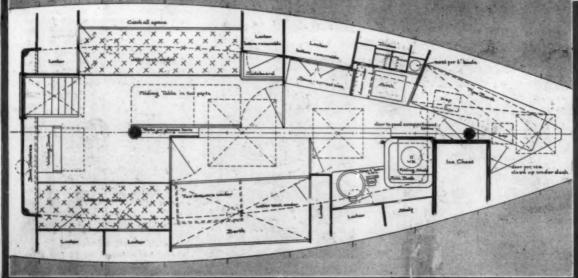
seeking recreation and real fun on the water, and who desires smaller operating expenses than an out and out motor boat of the same size would entail. She can be run with the help of one paid man, and by virtue of her sails can cruise for a large proportion of the

time without any expenditure for fuel.

The cabin accommodations are very roomy

for a boat of this size, the owner's quarters providing a stateroom with a double berth, and a saloon with two berths and transoms for two extra. The main cabin is further furnished with a folding table, sideboard, writing desk, book shelves, glass rack, etc. Forward of the owner's stateroom on the starboard side is the bathroom, which is



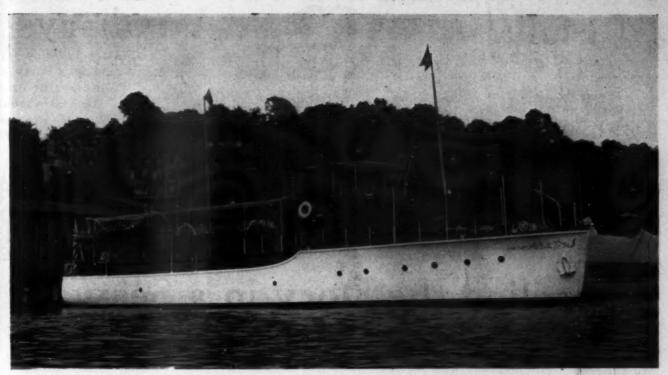


As may be seen from the plans, Mallard has been laid out with an eye to convenience and roominess. A headroom of 6 feet 2 inches is given

ers and shelves. A commodious ice chest is immediately forward of this compartment, and the galley is op-posite the latter. A pipe berth for the paid man is located in the galley on the port side. Locker space is plentiful.

The boat is

The boat is equipped with a 15 h.p. heavy-duty Sterling motor, which has two cylinders with bore and stroke of 51/4 7 inches, and develops its rated power at 500 r.p.m., turning a 24 x 24-inch Thompson feathering propeller.



Reola II was designed by Cox & Stevens and is the fourth boat built for Mr. Olds by the N. Y. Yacht, Launch & Engine Co.

, a Staunch 80-Footer

Southern Cruiser for R. E. Olds, of Motor Car Fame, Designed and Built in Conformity with His Rough Plans-Large Amount of Awning-Covered Deck Space a Feature of the Boat

THE yacht shown in the acompanying illustrations is Reola II, owned by R. E. Olds, of Lansing, Mich., builder of the

Reo automobile, and designed for him by Cox & Stevens, of New York. The rough plans of the vessel were prepared by Mr. Olds who had in mind extensive cruising in Florida waters, and she was built by the New York Yacht, Launch & Engine Co., of Morris & Engine Co., of Morris Heights, N. Y., which com-pany had previously constructed three other boats for the same owner.

Reola II is 80 feet long by a beam of 16 feet and she draws 3 feet of water. The crew's quarters are placed in the forward part of the hull and consist of forecastle for the men and stateroom for

the captain. The engine-room is aft of the crew's quarters under the deck-house and is equipped with two four-cylinder 61/2 x 9-inch

Sterling engines. A direct-connected electric lighting outfit is also provided in this compartment, as well as the other usual fixtures for a boat of this size.

The owner's quarters are laid out with a large saloon having two staterooms forward of it with two more aft with a bath connected to each pair of staterooms. The deck-house is used as a diningroom and is furnished with extension dining table and chairs, while a buffet is built in at the after end. The galley is just abaft the deck-house on a lower level, the roof of this compartment eing used as the bridge. The staterooms are paneled in white, and the finish of the saloon and deck-house is in mahogany.

Photographs by Levick



Two four-cylinder 61/2 x 9-inch Sterling motors are installed





ling the Dory in a Seaway

Valuable Pointers on the Control of a Small Open Boat in a Quartering Sea or in a Trough-How and When to Anchor and How to Land Through Surf With the Least Danger

THE PRIZE CONTEST-Answers to the First Question in the May Issue

Expert Dory Seamanship

(The Prize-Winning Answer)

N answering this question it should be understood that the handling of a boat is something too elusive for fixed rules, as everything depends on the man, the place and the boat. In this particular case we shall assume that we have a small, well-built sea-worthy motor dory. So much for the boat— now for the man and the place.

As we intend to be real boatmen, we shall have to be out sometimes when we possibly should be in. To have any fair amount of confidence at these times we must know our boat and what she can stand. This knowledge can be acquired only by trying her out on every possible occasion when there is a little sea running. In this way we get the feel of her, and begin to know her ways and how much ability she has as a sea boat. For the one who has had no experience we shall tell in a general way what he may reasonably expect of her and how to handle her to the

best advantage.

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Our boat ought to be perfectly safe in a three or four-foot seaway up to the point when they begin to break, and even then a breaker of this size is too light to turn us over, although plenty large enough to fill us up. We can go into this sea head on or quartering, or we can run before it provided we have a good skeg on the bottom. If you go directly good skeg on the bottom. If you go directly head on you will find it very uncomfortable, as the dory will rise sharply to the crest and drop down on the other side with a smack, but if you meet the waves quartering you will slide up them and down the other side without the least fuss or slap. Sometimes you will meet big fellows so steep, yet not breaking, that if you went in head first with speed on, you would probably run her nose under and half fill the boat. Always reduce speed when going into a bad head sea, as the slower the speed the better she will behave.

If you still stay out for any reason, and the wind is increasing in strength you will find that the rollers are increasing in height and are breaking much more heavily. are breaking much more heavily. You no longer dare meet them quartering, as they are now heavy enough to knock you over at the least chance. Also, if you are running before it, you begin to find her unmanageable and yawing badly. This is caused by the roller lifting the stern up and forcing the bow down, stopping her way, while the force of the breaker behind.

of the breaker behind keeps on pushing, and

QUESTIONS FOR THE SEPTEM-BER ISSUE

How may the actual speed of a motor boat be determined with-out the use of a ship log? Suggested by F. A. Z., Alpena, Mich.

2. Describe and illustrate the best bilge pump for a medium size boat, stating where it should be located, and how piped.

Suggested by A. O. G., Portland, Me.

3. Describe with sketches a folding windshield for a runabout.
Suggested by H. D. B., Geneva, N. Y.

RULES FOR THE CONTEST

Answers to these questions, addressed to the Editor of MoToR BoatinG, 119 West 40th St., New York, must be (a) in our hands on or before July 20. (b) about 500 words long. (c) written on one side of the paper only, (d) accompanied by the senders' names and advresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 20th of July. The editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article advertised in the current issue of MoToR BoatinG, of which the advertised price does not exceed \$25, or a credit of \$25 on ony article advertised in the current issue of MoToR BoatinG which sells for more than that amount. (There are three prizes—one for each question—and a contestant need send in on answer to but one if he does not care to answer all three.)

For each of the questions selected for use in the next contest, any article advertised in this issue of MoToR BoatinG, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of MoToR BoatinG, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of MoToR BoatinG, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of MoToR BoatinG which sells for more than that amount. RULES FOR THE CONTEST

twists her sideways to escape this. This is very dangerous, as, if she is thrown side on,

he may be rolled over, or at least filled up. The thing to do now is to watch your chance for a smooth, and turn quickly head on, stop your engine and throw out a drag; or if you can reach bottom an anchor, even though it drags, will hold her head up. Anything will do for a drag—cushions, life belts, seat boards, etc. Some boats will not readily ride to a drag, however, but want to turn around into the trough, which in our case with an open boat would be the finish. To guard against this, and also to hold her at any time it may be necessary, such as when the engine stops in a dangerous sea, or to turn her quickly head on when going to heave-to, get a long steering oar (make it in two pieces if neces-(Continued on page 52)

Experience and Skill Important Factors

DORY needs to be ballasted with care: she takes on stability quite readily, and the placing of weights is subject to individual experiment depending somewhat upon the work she is to do. One complaint frequently made against this type is that it spanks badly in a head sea. This is very materially lessened if not entirely avoided by placing ballast forward, but this can easily be over-

In running with a quartering sea, or in the trough where there is need of care, a watchful eye must be kept to windward for the big fellows. They usually come in groups of twos and threes, and upon their approach it is wise to swing off before them until they pass, or if in the trough head up and ride them. At such times it is a matter of utmost importance that you have full control of the boat, and as rudders are not always highly efficient at such times, it is recommended to those who are liable to be caught in such weather that they have a rowlock installed in the after part of the boat in order that a steering oar may be used. A quartering sea has a nasty tendency to broach a boat to, which in some circumstances is dangerous, and the skillful use of a steering oar will prevent this, or at least do much to lessen the danger.

Oil can be used with good effect when running into a sea, or when riding to a sea anchor, and in the first case it should be dripped overboard well forward, and from the sea anchor when riding. There is no way of projecting a slick to an efficacious position to windward when a boat is proceeding with a quartering sea.

A sail in a dory in time of need is a blessing, provided there is shelter somewhere off to leeward. It matters little the type of sail to use in a motor dory in running with the wind abaft the beam, as one kind is about as good as another; but in attempting to sail on the wind one is as bad as another. A motor dory with a skeg aft and light draft forward will not work to windward under sail-in fact she will make leeway like a salt hay scow.

The dory has had a remarkable vogue, and has proved itself with oars, then sail and finally with power. It is essentially seaworthy.

Gershom Bradford, 2d, Washington, D. C.

Launching From a Wharf

Methods of Procedure in Putting a Motor Boat Afloat When There Is No Beach, Marine Railway or Derrick Available-Shear Poles, Tilting Platform and Other Devices Suggested

THE PRIZE CONTEST-Answers to the Second Question in the May Issue

Let Your Motor Car Help

(The Prize-Winning Answer)

HE man who is forced to launch his boat from a wharf, with no beach, marine rail-way or derrick available, must expect to do some good hard work before he can com-

mence his season's cruising. It is by no means an impossible task, however, and can be accomplished safely and speedily by using a pair of shear legs, as shown. These should be of sound timber, at least as long as the boat to be launched, and about six inches in diameter at the small end. They should be firmly bolted together near one end, with a spread of about ten feet at the other. Use 2¾-inch bolts, and then lashing, as shown in Fig.

1. Around this lashing pass three or four turns of rope to take the hook of the upper lifting block, described below, and ouse the hook with marline or twine. Now attach the guy ropes, just above the lashing. There should be two of these, of 3½-inch circ. manila, led to piles or good stout stakes at least fifty feet from the shear legs. The farther back you can lead the guy ropes, the better, as this reduces the strain on them, which, due to the angle, is actually greater than the weight to be lifted.

Have the boat lying close to the edge of the wharf, canted slightly toward the water. Now set the shear legs in position, close to the boat, as shown in Fig. 3, with the upper ends overhanging the water enough to let the boat clear when being lowered (see Fig. 2). You will be able to do this without difficulty by using the lifting tackle, varying the method to suit local conditions. Make sure that the feet of the shear legs are well secured against slipping, by driving stout stakes into the earth, or spiking blocks to the planking, if the

Launching a small boat with shear legs and auto-

wharf is planked. This much of the gear must be well fastened in place, as it does not move during the operation of launching.

For the lifting gear you will need two 8-inch triple blocks with hooks (that is, blocks with three sheaves each) and falls of 31/2inch circ. manila. The length of falls necessary will depend largely on the distance the boat has to be lowered, but be sure you have enough before you start—250 feet will probably be sufficient. One end of the falls should be secured to the becket of the upper block, and the other end led through the blocks and

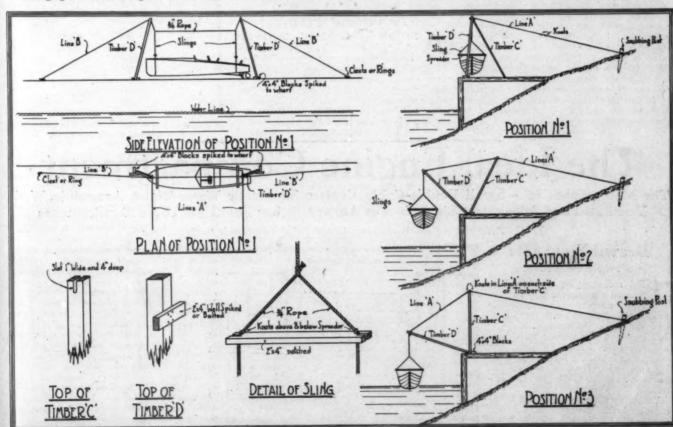
from the upper block to a snatch block or block with a single sheave, atached to the wharf, to give a straight lead for hauling. The power may be supplied by a team of horses, or an automobile.

Now pass rope slings around the boat, three or four feet from each end, protecting the paint with pieces of canvas, and fit shores inside if necessary, to prevent crushing. Bring these slings together at the hook of the lower block, as shown in Fig. 3. Pass other lines around the bow and stern, and lead them to pilings or cleats on the wharf. Take several turns, but do not make them fast.

Start the automobile ahead slowly to lift the boat from the wharf. Raise her a couple of feet or so and then carefully slack off the lines from bow and stern, allowing the boat to swing out directly un-der the head of the shear legs. Now let the car back slowly, lowering the boat

the car back slowly, lowering the boat into the water. Keep a couple of goodsized blocks of wood ready to place under the rear wheels in case the brakes should slip. The sizes given are ample for handling the average 25- or 30-footer with perfect safety, and may be reduced for smaller boats.

A. R. Ware, Camden, N. J.

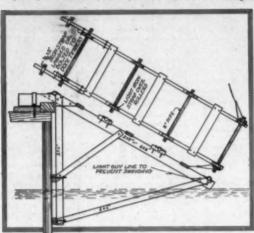




うじょうじょうじょうじょうじょうじょう A Portable

THE portable railway shown in the sketch should provide a safe and easy way of launching a boat from a wharf where the height is not over six or seven feet, although it could be built for greater heights. It could it could be built for greater heights. It could be quickly constructed, and by removing a few

Railway



portable railway devised by Mr. Christie

bolts it can be sufficiently knocked down so it can be loaded on a wagon and hauled to a place of storage for subsequent use in tak-ing the boat out of the water.

For assembling it is suggested that the two vertical pieces are first bolted together and the lower braces attached if they are to come below water. This part can be easily taken over and fastened in place; then the upper pieces or track are put in position and bolted at the upper ends and then to the braces.

The plan shown for fastening the upper end to the wall or wharf would not be suitable in some cases on account of the different con-struction of wharves. This fastening is a very important part of the device and the place where it is to be used should be sized up and a plan settled upon for secure attachment at this point. The sizes shown in the sketch should provide sufficient strength for launching the average open boat of about 25 foots and if small equipment or heavy hours are feet, and if small cruisers or heavy boats are to be launched larger timber must be used. Extra braces could easily be added and on them the strain really comes.

C. H. CHRISTIE, Saginaw, Mich.

When Helpers Are Few

WO men in about two hours can launch a boat up to 26 feet long by using the following material: about 200 feet of 34four pieces of 4 x 4 (or 6 x rope, inch fir 16 feet long, four 4 x 4-inch blocks 18 inches long and two 2 x 4s 7 feet long.

Notch the ends of the 2 x 4s for sprea

and place the sling ropes in place in the notches with knots above and below the spreaders. If the cradle is still under the boat tie the sling ropes to it, or in the absence of the cradle put the sling ropes around the boat and pad between the ropes and the hull with canvas, old clothing or any soft material. Now spike the 4 x 4inch blocks to the wharf about two feet from the ends of the boat and block the boat up about twelve inches from the wharf and as near its edge

Tie the lines A and B to the tops of timbers D and tie the spreaders to line B, next securing the ends of the lines B to rings or cleats on the wharf. Set the timbers D in place and prop them up with timbers C as shown in Position No. 1. the lines A to the snubbing post or rings in the bank, leaving a little slack. Now tighten up lines B and the boat will lighten up on the block-ing which can then be removed. Everything

should now be as shown in Position No. 1 Next tighten up on timbers C until the boat swings out over the water, and slack off on line A. Set the ends of timber C between the two knots previously tied in lines A.

Now things will appear as shown in Position No. 2

Continue slacking off on lines A until the boat reaches the water, as shown in Position No. 3. The slings can now be removed, the timbers and ropes dismantled and all is over.
M. A. WRIGHT, St. Paul, Minn.

A Tilting Frame

SSUMING that our boat is about 25 feet in length and weighs in the neighborhood of 2,500 pounds, the first thing to be done is to procure timber and plenty of rope from some available source. Success depends largely upon the size and length of the timber, which should be 4 x 10 inches in thickness and 12 feet in length, if the distance between the surface of the water and the wharf level is three feet. If it is more than this the length of

the timber will be four

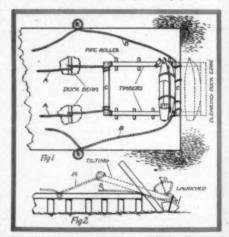
whatever distance Two lengths of the timber will do. it is. Place these perpendicular to the edge of the wharf, parallel to each other and far enough apart for the boat to span them safely, spike or bolt cross strips C to the timber at both ends. Next procure some lengths of pipe to act as rollers underneath the timbers (Fig. 1).

When this has been completed place the boat across the timbers, well upon its side, pitching inward from the edge of the wharf and close to the cross-strip C at the wharf's edge. Lash the boat securely to the timber.

The next step, which is the most important one, is the placing of some strong guide ropes, one at each corner (A-A-B-B), fastened well to the frame. The two guide ropes at A-A must be carried around a beam in the wharf floor, several feet from the launching frame, so as to be able to control the playing out of the rope, and to restrain a too sudden tilting of the frame in the launching (see Fig. 2). It would be well to wrap some can-vas or burlap bagging around the corners where the ropes are fastened to prevent possible shearing by the corners of the timbers. The guide ropes at B-B should also be carried around something to feed out the slack.

Everything being arranged, shove the launching frame evenly over the edge of the wharf, keeping all ropes taut, and when it is well out, tilt the frame, playing out all four guide ropes carefully.

A. WEDESWEILER, Brooklyn, N. Y.



A tilting platform may be used if the distance

ompartment

The Motor Space in a Small Double-Cabin Cruiser Should Be Water-Tight, Accessible, Well Ventilated and Adequately Lighted-The Answers Below Fulfill All These Requirements

THE PRIZE CONTEST-Answers to the Third Question in the May Issue

Drawn From Life

(The Prize-Winning Answer)

THE accompanying sketches illustrate an approximate layout of the engine compartment on my double-cabin bridge-deck cruiser, a boat of my own design and construction, about 29 feet long by 6 feet 4 inches beam, with a displacement of about 2½ tons. The a displacement of about 21/2 tons. main cabin is aft, the forward cabin being used mainly for toilet, and storage, and for access to the engine compartment

Taking up the points specified in the question in the order given, the first consideration is the construction as re-gards water-tightness. My deck is laid of 114-inch square cypress, the hatch over engine fitted in, and the deck then cov-

The drawings contributed by Mr. Brower show the approximate layout of the engine-room of his 29-foot double-cabin criuser

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ered with canvas, laid in paint, and carried up the sides of the engine hatch and the ends of the The cabin door-sills are eight inches. and the top of the engine hatch about ten inches above deck. A passage about four inches wide each side of the after cabin guarantees rapid drainage of any water coming aboard, scuppers being provided at intervals in the bulwark aft.

second consideration is accessibility. Being a small boat, of course headroom is limited, but a man of medium height can sit or kneel on the floor to work around the motor in comfort.

The cover on the hatch, being hinged to the after edge, turns up against the front of the after cabin, and, when so opened, affords a means of getting at the top of engine for necessary adjustments. When closed and locked down on rubber packing, this cover becomes water-tight again. The hand starter

and all controls are on deck, convenient to reach from the steering wheel. By turning the motor on end and removing the exhaust manifold, the former can be taken out through the engine hatch.

Entrance to the engine compartment is from

the forward cabin only, and the water-tight

one in each side of the forward cabin furnishes some light as well.

should like to speak of some additional features before closing. My main gasoline tank is under the after deck, and supplies, by air pressure, a smaller tank which is located a rectangular case on the bridge deck. This case is aft of the forward cabin, and the small tank located in the lower part of it feeds fuel to the engine direct, by gravity. The upper part of the case supports the steering wheel, controls and binnacle, and contains the switchboard and gauges.

L. F. Brower, New Britain, Conn.

A Satisfactory Layout

HEREWITH is a plan for the motor room of a small double-cabin raised-deck cruiser that has been tried and found to be satisfactory

A-The deck is water-tight, being canvascovered, the canvas turning up on the cabin, ends and sides as shown. The openings into the forward cabin and motor room are cut eight inches above the deck so that it is impossible for any ordinary amount of water to penetrate these compartments.

Ventilation Well &

Provided For

THE drawings show a motor compartment for a double-cabin cruiser, 30 to 35 feet in length. Slight alterations make it adaptable to a larger boat, and, owing to variation in size and style of boats and motors, no measurements are given.

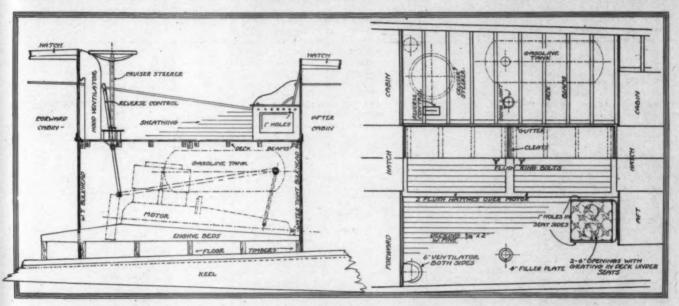
Water-tight bulkheads, forward and aft, and a water-tight deck make the arrangement excellent. Over the motor are two flush hatches, which, when raised, permit free access to all parts of the motor and give headroom, so desirable when working below.

The cardinal feature of this design is ventilation. The air, entering the hood ventilators, passes through the motor compartment and leaves first through holes in the deck and finally through holes in the seats.

By raising the hatches the motor is fully exposed and provided with an abundance of Port holes or deck lights may natural light.

be fitted on larger boats.

The deck is built on a radius of eighteen feet, and covered with 34 x 2-inch white pine, the seams caulked and puttied, or filled with



Drawings for the motor compartment of a bridge-deck cruiser of 35-foot length offered by Mr. Gray. The plan includes the reverse-operating apparatus

bulkhead that forms the after part of the compartment extends as high as the bridge deck, except in the center, where it is carried up to form the ventilating shaft, described below. The forward end of the after cabin extends over the bridge deck about a foot, leaving a shelf in the cabin on the port side of the ventilator, and the top step of the cabin stairs on the starboard side.

Ventilation is next in order. From the center of the after part of the compartment, a passageway about a foot square extends through the roof of the cabin where it is continued by a dummy stack. The exhaust pipe from the motor runs through this, with the muffler in the stack. As an aid to ventila-tion, a fan similar to an automobile fan, and driven by the motor, forces the foul air upward through the above passageway. A cowl ventilator on the roof of the forward cabin supplies plenty of fresh air through the entranceway.

Lastly, provision for natural lighting: In each side of the engine hatch is a rectangular, water-tight, plate-glass window measuring about four by twelve inches. In each side

B-The motor room is easy of access through the hatch on the starboard side, and a ladder on the forward bulkhead leads below. Here under the raised forward deck there is ample headroom and plenty of elbow room to start the engine, or to make such repairs as are necessary from time to time. Under the bridge deck there is, of course, less headroom, but there is sufficient to navigate about in. The exhaust is on the opposite side of the boat from the engine hatch. Here is a splendid location for storage batteries, spare parts and dunnage that is not used every C-Ventilation is taken care of by the large skylight over the flywheel, an 8-inch

in the center of the forward bulkhead, the two lights in the raised deck on the starboard side and the 2-inch copper tubes extending through the bottom of the boat with inverted scoops attached which will continually draw while the boat is under way, regardless of the direction.

D-An abundance of natural light is obtained from four 6-inch heavy glass deadlights let into the bridge deck and the bulkhead, and from two side port lights and the skylight. The hatchway also admits air and light.

marine glue. A strip four inches wide should be fitted across the bottom of each entrance, on the inside. The two flush hatches over the motor, having the same radius as the main deck, should have gutter cleats under their edges to lead water to the bilge without striking the motor. Trim the hatch edges with 11/4-inch brass strips.

Build water-tight bulkheads of 36-inch white pine, laid diagonally with painted cloth between, and fastened together by small copper rivets, placed closely. All wires, piping, or shaft passing through the bulkhead, must be water-tight. The exhaust may be under water, or through the side.

Use a cruiser steerer with center controls. or one containing a reverse control also. nect all controls to the motor with suitable rod and bell cranks. The motor may be provided with a self-starter.

Two gasoline tanks, one on each side, and with filler plates in the deck, are supported by strong spruce cradles. Two 6-inch hood ventilators in the forward end of the deck rise over the top of the forward cabin. Two seats, one on each side of the after cabin entrance, have a row of 1-inch holes on each of



their sides, just below the sest cover. Under these seats, in the deck, are two 6-inch holes covered with grating.
ALBERT T. GRAY, Dover, N. H.

pers provided to carry away the water that comes in around the edges of the hatch. The cross section of the trough should be of lib-The eral size and depth, so that no water will slop over the edge.

The hatch should rest on deck beams at the forward and after ends and upon longitudinal pieces at the sides. Its construction is indicated in the drawings.

I have found from experience that when wooden beams are used for such a hatch, when it is of fairly large size, trouble is experienced in the hatch being curved up in the center when wet, due to the planks swell-ing and bending the beams. So in this case structu-ral steel I-beams are used, say of 3-or 4-inch depth of webb and bent to conform to the deck curvature and with the planks riveted or screwed to the beams. Itis a good plan not to force the planks too tightly together when laying and to fasten a piece of heavy canvas to tatch, between the

hatch bottom and the beams, with marine glue

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or white lead. There will be some expansion when wet in any case, and the hatch should be so fitted that it will not stick during wet weather.

Ventilation is well to have the bulkengine-room headed off from the forward cabin. but openings for ventilation can be provided into the cabin. If after this cabin is used only for storage there need be no partition between room, but if a better finish is required slats or grating panels (as shown in the drawings) can be installed. A couple of hood or screw ventilators may be set into the roof of the after cabin, but as these might have to be closed in wet weather, a further means of ventilation is pro-vided. The ceiling is removed from the sides of the cockpit, under

the seats, leaving the staving the same depth as the companionway sills and making as large an opening as possible above that and below the top of seats. The deck should not extend beyond the backing piece behind the staving, as shown, thus leaving an opening to the engine-room. The seat fronts should be slatted or grated, leaving generous-sized openings. Thus the tank compartments, as well as the engineroom, are ventilated and at the same time no water can be splashed below.

Natural Lighting-When the hatch is removed for work on the engine all necessary light is provided. A skylight should be lomoved for work on the engine all necessary light is provided. A skylight should be located on the roof of the forward cabin as far aft as possible. Then provide glass doors leading to the engine-room under the bridge deck. They should be of heavy glass and protected by brass guards, and should swing on hinges with removable pins so that the doors can be removed when any extensive work is being done on the boat or engine. If work is being done on the boat or engine. If the layout shown in the drawing were used a glass window could be located behind the companion stairs.

As a further means of lighting, deck plates of about 4-inch diameter are set into the hatch. These should be of the screw plate variety with extra lights or brass plates provided in case of breakage.

It is not advisable to use port lights in the side of the engine-room on a small cruiser because they would spoil the looks of the boat and being located so near the waterline would be a source of danger if broken.

Generally speaking, a boat of this type offers many advantages. The engine is placed amidships where its weight serves to make the boat more readily controllable in a seaway, while its situation under the deck is such that it does not encroach upon room valuable for other pur-poses. More room for working around it is allowed than is the case with single-cabin cruisers with the motor under the cockpit.
H. H. PARKER, Oakland, Cal.

DOWN CASE INVERTED SCOOP the bottom side of the hatch

novel feature of Mr. Atkin's arrangement is the provision for ventilation through un-der-water vents

For the Boat with a Sunken Deck

SMALL double-cabin cruiser in all A SMALL double-cabin cruiser in all probability would not be provided with a flush bridge deck, but the deck would be sunk somewhat below the sides of the boat. The gasoline tanks would probably be carried on decks under the seats, thus giving much more space in the engine-room below, which would be cramped for room in any event. It would be desirable to have the engine-room shut off from the main forward cabin to keep out noise and smell.

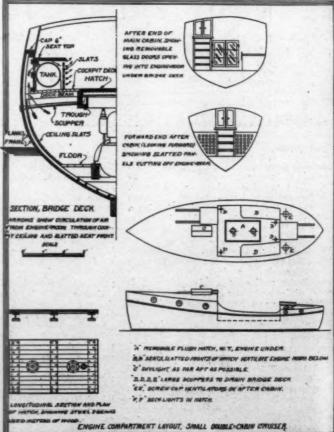
With these ideas in mind the following sug-

With these ideas in mind the following sug gestions are offered with the view of providing a, water-tight deck; b, accessibility; c, good ventilation; d, as much natural light as p

Water-tight deck-In the first place, bridge deck, if not flush, should be provided with a large scupper in each corner, at least two inches in diameter. The companionway sills should be carried up as high as possible above the deck—say ten or twelve inches. The flush hatch over the engine is made self-draining as described below.

Accessibility—The engine-room can be entered from the forward cabin and probably from the after cabin also, but as the headroom is bound to be limited, a large easily reroom is bound to be limited, a large easily removable flush hatch is located in the bridge deck over the engine. This hatch should be large enough to permit the removal of the entire power plant through it. It is not fastened down in any way (except for security when leaving the boat) and when removed allows plenty of room and light to work around the engine. A wooden or calvanized icon the engine. A wooden or galvanized iron trough should be built around the edge of

the hatchway under the deck and at least two 1-inch scup-



Complete drawings of the engine compartment for a si with sunken deck, as suggested by Mr. Parker all crui



The new clubhouse of the Shore Acres Club

New Sound Club

The Shore Acres Club Recently Organized at Mama-roneck to Extend a Hearty Welcome to All Motor Boatmen

ONG ISLAND SOUND has since the beginning been the home of the best and foremost yacht clubs the best and foreinost yacin chaos in the country. Up to a few years ago the sport of sailing was the only sport recognized. Even the auxiliary was looked down upon, and the man who owned an out and out motor craft was far from welcome at a majority of the best clubs.

But now all is different. Slowly but surely the motor boat worked its way in until to-day the club which does not have as many motor craft as sail en-rolled is back-sliding. But there has remained a feeling that the motor boatmen are not true yachtsmen, and in the club life they have not held the

rank to which they rightly are entitled.

Within the past year there has been organized the Shore Acres Club at Mamaroneck which will become the home and rendezvous of thousands of motor boatmen on Long Island Sound before long. Already a magnificent clubhouse has been erected on the point of land which forms the outer-most boundary of Mamaroneck harbor, and plans are now under way to create a basin for the mooring of all types and sizes of motor craft which will be safe and protected in all kinds of weather.

All motor boatmen will be wel-come at the new Shore Acres Club irrespective of their other club affilia-



A view of the clubhouse grounds



Approaching the yacht basin from Long Island Sound



Looking toward the Sound from the landing float

tions, and the officers are prepared to issue privilege cards for a limited period for the use of their clubhouse and restaurant with an unrestricted use of their anchorage and float.

When it is realized by the motor boatman that the Shore Acres Club is the first club organized on the Sound solely for motor boatmen its success will be assured.



12-Horse 300-Pound Motor

Speed and Power in Small Bulk and Light Weight the Principal Features of the 1916 Universal-Four-Cylinder Block Motor with 25/8x4-Inch Bore and Stroke Developing Its Power at 1,600 R.P.M.



300 to 1,600 r.p.m. The oil pump is of the plunger type operating off the half-time shaft, the bearings are die cast, and the camshaft is of the one-piece hardened type. The carbureter is a float feed instrument, a Berling magneto is used, and the reverse gear is built in and enclosed on an extension base. A few of the more important dimensions are as follows: Diameter of the flywheel, 12 inches; width of base flanges, 5½ inches; length of base flanges, 22 inches; and length of motor

The oiling system has been given special attention, and the pump is contained in the crankcase where its operation can be easily inspected. In filling the crankcase a gauge indicator tells the height of the oil. The main bearings have oil holes and grooves and receive the lubricant from the splash of the

connecting-rods, which also true of the camshaft, bushings, piston pins, etc.

Centralization of control is one of the important features of this motor, the rear starter being an integral part of the reverse gear, and the spark and throttle levers mounted

The Six-Cylinder 5x6

T-Head Motor with Cylinders Cast Separately a Recent Addition to This Already Large Line-Bosch Magneto and Schebler Carbureter Used, and Leece-Neville Starting System Optional

THE Anderson engine, manufactured by the Anderson Engine Co., of Chicago, contains a number of improvements in the 1916 models, although no radical de-partures have been made from those of last The motor shown in the accompanying year. The motor shown in the accompanying illustration is the six-cylinder, 5 x 6-inch ma chine, which is a recent addition to the al-

ready large Anderson line.

The cylinders are of the T-head type and are cast separately. The exhaust manifold is water-jacketed, and the water intake

and overflow manifolds are of polished brass, fastened with studs to the tops and sides of the cylinders. A large pump forces the cold water directly around each exhaust valve in such a manner that all parts of the cylinder are kept constantly at an even temperature; this pump may be of the plunger or of the gear type, as desired.

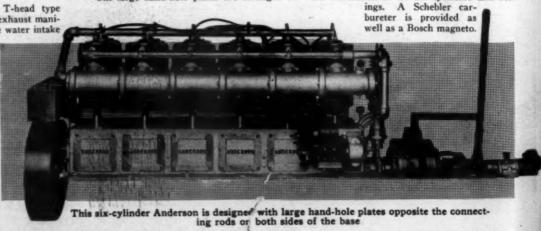
The flywheel is bolted to a solid flange on the crank-shaft, and the main bear-ings, of which there are seven, are lined with Parsons white bronze bushings. The lower connecting rod bearings are also of the same ma-terial and size. The cams and rollers are made of hardened tool steel, and together with all the gears are enclosed in the crankcase. The push rods are of steel, adjustable in length, and work in extra long bronze key-

seated guides.

Six large hand-hole plates are arranged on

each side of the crankcase, so that the reciprocating parts and all members contained inside can be readily gotten at if necessary. The intake valves are operated mechanically.

A "C" Special Paragon reverse gear is fitted into the extended base, being entirely enclosed in the new model. A Detroit thirteen-feed mechanical oiler automatically takes care of the lubrication of all the cylinders and bear-



The Kahlenberg Semi-Diesel

Three-Cylinder Motor Which Is Started on Gasoline or Distillate and Switched Over to Fuel Oil-Ability to Operate Any Cylinder on Either Fuel an Important Advantage

HE Kahlenberg heavy-duty semi-Diesel marine engine, manufactured by the Kahlenberg Bros. Co., of Two Rivers, Wis., has been tried out in actual service for the last four years and has proven to be a machine of excellent qualification. Instead of starting by the hot torch method as is done in some semi-Diesels, the Kahlenberg is put into operation on either gasoline or dis-tillate, and after the machine has been running for two or three minutes, the fuel pumps are turned on and the engine then operates on the semi-Diesel principle. Only pure air is taken into the base, and after this is compressed, and just before the piston reaches the top of the stroke, the fuel oil or kerosene is injected directly into the combustion chamber by the small injection pumps, one of which is sup-plied for each cylinder. It is declared that because there are no open ports or leaky intake valves, the fuel economy is better than in most engines.

A feature of the Kahlenberg is that any cylinder can be operated individually on either fuel so that if anything were to go wrong with an injection pipe or pump that cylinder could instantly be switched on to gasoline or distillate with the other two still operating on kerosene or fuel oil. Due consideration in the design of this motor was given to the elimination of carbon deposits, with the result, it is said, that it is unnecessary to clean it internally more than once a year.

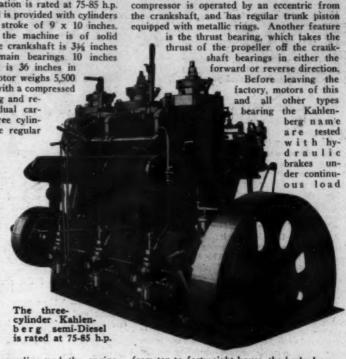
Although massive in design, the Kahlenberg is completely centralized in control and pos sesses all the flexibility desired in a motor of this type. The three-cylinder engine shown in the

accompanying illustration is rated at 75-85 h.p. at 300-375 r.p.m., and is provided with cylinders having a bore and stroke of 9 x 10 inches. As has been said, the machine is of solid construction, and the crankshaft is 33% inches in diameter with main bearings 10 inches The flywheel is 36 inches diameter, and the motor weighs 5,500 pounds. It is fitted with a compressed air outfit for starting and reversing, and individual car-bureters for the three cylinders are part of the regular equipment The friction clutch which is pro-vided is arranged to

run in a continuous bath of oil and with it the propeller can be turned so slowly that the boat barely moves, and may be kept at this slow speed for any length of time desired. The design of the clutch is such that should the friction band be broken through accident, the bolts which bind the clutch together be inserted as may

run in this manner until repairs can be effected.

in a regular flange coupling and the engine from ten to forty-eight hours, the brake horsepower being taken at different times and at all The motor is equipped with an air compressor attached to the forward cylinder. This speeds. During this time, defects, if any, are at once located and remedied.



arson 12 H.

Complete, Compact Unit Power Plant Having Rear Starter Constructed Without the Use of Sprockets and Chains-Four Cylinders Cast En Bloc and Engine Base in One Rigid Casting

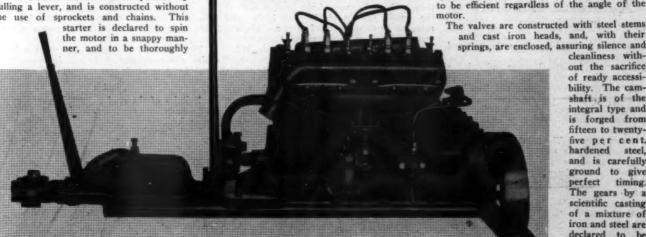
NE of the primary features of the Aristocrat 12 h.p. motor produced by the Carson Motor Co., of Detroit, Mich., is the completeness of its equipment, there being no extra parts to supply after the engine is installed in the boat. Further than this, the motor was designed as a complete unit, and so does not give the appearance of being

built up piece by piece. Secondary only to this is the mechanical starter which is new in design and which is considered more than a substitute for an electric starter. It is operated by pulling a lever, and is constructed without use of sprockets and chains.

reliable both in construction and in operation. The engine base is made in one casting, giving the rigidity essential to constant perfect alignment of all the moving parts, and the cylinders are cast in one block with the cylinder head unit removable. Gray iron is the material used for the cylinder casting and bores as well as the pistons and piston are ground to a mirror surface. As the rings are ground to a mirror surface. cylinder head unit is removable it permits examination and cleaning of the combustion chambers and valves with the least expenditure of effort and also

allows of efficient cooling of all vital parts. The crankshaft is a heavy drop forging of The crankshaft is a heavy drop forging of thirty-five per cent. carbon steel specially heat-treated and ground, and it is carefully balanced before assembling. The connecting-rods are of I-beam drop forgings, strong and yet light in weight. The bearings are die castings and are of generous size. They, as well as the pistons, cylinder walls and timing gears are lubricated by a positive oiling system which uses in part an oil pump of the plunger type working off the camshaft. This lubricating system is stated to require no adjusting and to be efficient regardless of the angle of the

> cleanliness without the sacrifice of ready accessi-bility. The camshaft is of the integral type and is forged from fifteen to twentyfive per cent. hardened and is carefully ground to give perfect timing. The gears by a scientific casting of a mixture of iron and steel are declared to both durable and quiet.



Starboard side of the Carson Aristocrat showing the arrangement of the intake manifold and the water-jacketed

we are anxious to receive from our readers new and workable stunt races and novel handicaps for use in this department. For each contribution that we are able to use we shall pay a minimum of \$5—Editor]

This month we offer more novel races to the number of five, all of which will prove as interesting on next regatta day to Mr. Plugalong Slowly as to Mr. H. P. Speedster—both members of your club. In doing so we again remind you that

A Consistency Race

N interesting race and one in which speed boats, cruisers and even auxiliary craft may be contestants, is to buoy off a triangular course (if possible within full view of the clubhouse) of two full miles-course three times around. Start all boats at one time, the actual time for the three rounds being taken, and the time of one of the rounds selected by the Regatta Committee, but not known to the contestants, being figured as the boat's time for the three rounds.

Any boats finishing in less than the time figured outside of an allowance of three per cent. will be disqualified. The boat finishing closest to its figured time, if within the three per cent. allowance or longer time than that figured would be the winner.

This makes a good race and gives each boat a chance, as consistency in running is what counts. It also brings all the motor boats together in one race. Take for example four together in one race. Take for example four boats starting at 2 P. M., the time of the boats being taken in their second rounding of the

A-12 minutes

B—18 minutes C—15 minutes

D-16 minutes

The time figured for the boats to finish would be:
A-2:36
B-2:54
C-2:45

D-2:48

A finished at 2:35, one minute less than her figured time, but just within the three per cent. B finished at 2:51, three minutes less than her figured time and as the three per cent. allowance was 1 minute and 37 seconds on her figured time of 54 minutes, she was disqualified. C finished at 2:45:30, being within 30 seconds of her figured time. D finished at 2:58.

This gives C first place, A second place, D third place, while B was disqualified.

K. A. W., New York City.

Bang-and-Go-Back or Automatic Handicap

Open to all boats enrolled in the

START AND FINISH-Between stake-boat and clubhouse.

PREPARATORY SIGNAL—One gun and red flag at 2:25 P. M. STARTING SIGNAL -One gun, red flag low-

ered at 2:30 P. M.
Course—Straightaway from starting line

until turning signal, then turn and recross starting line.

TURNING SIGNAL—The breaking of an aerial smoke bomb, which will be fired when the leading boat passes a certain point. This bomb will be fired by a man stationed at this point and will be plainly visible from all parts.

PENALTIES—The time from the starting gun to the breaking of the bomb will be doubled and taken as the allowed time for the race. The elapsed time for each boat will be taken and the variation from the allowed time will be doubled and added to the elapsed time, giving the corrected time.

WINNER-The winner will be the boat which has nearest the allowed time for her cor-rected time. In event of a tie, the captains shall draw for the prize.

TIMEPIECES-Any boat having aboard a timepiece of any sort will be disqualified.

CREWS-Each boat will carry a crew of at least two, and no person shall leave or enter a contesting boat after the starting gun, except in case of accident.

RULES-Rules of the road shall govern in all cases.

PROTESTS—All protests must be made in writing and filed with the committee within one hour after the race is finished.

H. H. B., Schenectady, N. Y.

Rescue Race

THIS race depends as much upon skill in manipulation as upon speed. manipulation as upon speed. Each boat is provided with a "dummy" of some floatable material to be in the custody of an observer, who is carried by each boat and appointed by the racing committee. The race is over a prescribed course, but at a time unknown in advance to the captains, and designated by a signal from the clubhouse, each observer throws overboard the dummy and upon a second signal from the clubhouse server gives the cry "man overboard." It is then the duty of the captain to go back, rescue him and proceed over the remainder of the prescribed course. The first captain to bring in his "man" is the winner of the

It is the duty of the observer to see to it that there is no lessening of speed before "man overboard" is given, that the rules of the road are adhered to and that due care is observed in keeping out of the way of other contestants.

This race is very interesting, for it often happens that the slower boat is the first to return, either because of the greater skill of the captain or because the boat lends itself more easily to quick manipulation. The observer's job is a very important one.

HAMILTON A. HOOPER, Baltimore, Md.

A Retrieving Event

THE crews line up on the club float, and at the signal take their dinks and row from moorings, and run for the stake-boat, placed about one-half mile away. At a signal of one gun, given before the boats reach the stake-boat, each contestant cases and the stake-boat, each contestant cases and the stake-boat. his dink, and continues on around the stakeboat. After passing the stake-boat, all run back and pick up their respective dinks, take them in tow, and run to the finish line, in front of the club float. The first boat across the line wins.

The rules are as follows:

1. Dinks must be tied up at club float be-

Crews must not consist of more than

3. The stake-boat must be left to port when

turning.
4. Rules of the road must be observed at all times.

This race is particularly interesting where there are a number of one-design bright fin-ished dinks, when the contestants find it harder to pick out their own tenders. A. S., Astoria, L. I.

A Chance for Luck

THE committee should appoint two captains, one for each squadron, or let the contestants select their commanders. These captains are to choose from all the available boats of the club fleet (regardless of size or class) to make two squadrons of equal number, which squadrons will be identified by white pennants with black odd and even numbers painted on them. (The odd numbers for one squadron and the even numbers for the other.)

The boats are anchored on the starting line with the captains on shore with their tenders. As the starting gun is fired the captains come up to the committee, receive an equal number of sealed cans, run to their tenders, until them and row out to their squadrons and distribute the cans, one for each boat. Each can contains a block of wood with a number stamp on it (these numbers running from one up to the number of boats in the combined squadrons).

As the captain of each boat receives his can, he weighs anchor and proceeds around the course. The course for this race should the course. The course for this race should be marked by two stake-boats, one anchored about a mile above the clubhouse, and the other about a mile below.

As each boat comes up to the starting line (after going once around the course) the captain throws his can overboard and covers the course once more, comes up to the cans stops motor, and picks up one of the cans (without opening can, and using nothing but his hands), starts up motor and proceeds on the finishing lap. Then as each boat comes home, the squadron to which he belongs is credited with as many points as there are boats left to finish the race. After all have come in, the committee takes the cans (keeping them separate) and opening them, counts the total number on the blocks, and deducts this from the total number of points which the squadron has made.

The squadron which has the most points wins, and each boat of the winning squadron shall be given a prize.

Rules

1. Rules of the road.

Each boat may carry as many or as few as desired.

3. A flag with an odd or even number will be provided for each contestant, to be flown from the bowstaff. The contestants must fly their distinguishing flags, so that the committee can identify the two squadrons.

Withdrawal of any boat, failure to start, or failure to comply with the rules, will cause the squadron to which she belongs to lose whatever points she might have made had she started and finished.

5. The committee should provide a competent observer for each boat to go aboard and see that these rules are complied with.

B. H. R., Waco, Texas.



This department of MoToR BoatinG is maintained for the purpose of giving its readers opportunity to ask questions, reply to other correspondents' communications and submit ideas, suggestions, opinions or experiences which may be of interest and assistance to motor boatmen. There are no rules governing the department other than that postage must be enclosed when an answer by mail is desired,

and that the name and address of the writer must be given in each instance. No anonymous contributions will be considered for publication, but initials or a pseudonym will be substituted for the writer's own name if the request be made. The editor does not, of course, hold himself responsible for statements made or opinions expressed by contributors to this department.

Speed Increase Improbable

To the Editor of McToR Boating:
I wish to take advantage of your kind offer to help distressed motor boatmen.
I have a two-cylinder, 6 h.p. (at 800 r.p.m.) motor installed in a 15 x 3-foot 6-inch V-bottom hull. The hull is double-planked, and is heavily constructed throughout. The engine turns a three-bladed 14 x 17-inch wheel at 750 r.p.m., giving a speed of about 8 or 9 miles.

miles.

If you would be kind enough to recommend what ou would consider a proper wheel for this, giving as reat speed as it would possible to secure, I shall e greatly obliged to you.

J. W. W., Los Angeles, Cal.

[The speed of 8 or 9 miles per hour which you are obtaining is about all you can expect from this hull and power plant, and we do not believe any change of propeller would give you much material gain. However, a two-bladed propeller, 15 inches in diameter by 15 inches pitch, would probably allow your motor to come to its designed number of revolutions per minute, and perhaps give you a speed a trifle better than you are now obtaining.]

Average Practice in Hull and Power Plant Dimensions

To the Editor of MoToR BoatinG:

The data on the enclosed sheet has been compiled and checked by a member of our organization.

May we impose on your good nature by asking for your check on these specifications? We desire to know that they are absolutely correct, and in our opinion you would be able to give us very accurate information in this respect.

C. A. D., Cleveland, O.

		Or the big ore	Accompany of
Over all	Open and C	ruiser . Hulls	d
Length	Beam	(r.p.m.)	H.P.
18'	4' 3"-4' 9"	800	3- 8
20'	4' 6".5"	800	5- 8
22'	4' 9"-5' 6"	800	5-12
25"	5' -6'	700	8-15
28'	8' 6' 6"	700	10-15
30'	5' 6"-7'	600-700	12-20
35'	7' -8' 6"	600-700	15-25
40'	8' -10'	450-500	20-35
28' 30' 35' 40' 45'	8' -11'	400-500	25-40
50'	8' -10' 8' -11' 9' -12'	350-450	25-50
60'	9' -14'	350-400	30-65
-		Hulls	
18'	3' 6"-4"	800-1,000	6-12
21'	3' 9"-4' 3"	800-1,000	8-20
23'	4' 4' 6"	800-1,000	12-30
25"	4' 4' 9"	800-1,000	15-40
21' 23' 25' 30'	5' -5' 6"	800-1,000	20-50
35"	5' -5' 9"	800-1,000	30-60
	Heavy Hull	s, Tugs, Etc	2.
30"	8' - 6'	325-400	15-20
35"	9' -11'	325-350	20-25
40'	10' -12'	300-350	20-35
35' 40' 45'	11' -14'	300-350	25-45
50*	12' -14'	300-325	25-60
50° 65°	14' -15'	300-325	30-60
70'	14' -17'	300	40-75-10

[The data which you have compiled will ap-ly very closely to rational motor boat forms

in most cases. However, we do not think you mean to assume that hulls of other proportions would be impracticable from any of many standpoints.

We have made an analytical study of the dimensions of a large number of existing motor boats of the various types and have found that the average waterline beam in the different types is about as follows:

For open boats and fast runabouts, waterline beam = $\frac{LWL}{9} + 2$ feet.

For slow cruisers the beam should be between $\frac{LWL}{Q}$ + 4 feet and $\frac{LWL}{Q}$ + 5 feet.

For medium-speed cruisers a good practice would be to make the beam between LWL + 3 feet and LWL 9 + 4 feet.

For fast day cruisers the beam should be $\frac{LWL}{9} + 2$ feet and $\frac{LWL}{9} + 3$ feet.

In regard to the power of the motor, one of the best ways to determine this is on the basis of piston displacement, and for slow cruisers a piston displacement in cubic inches of (LWL) is about right. For medium-speed

cruisers (LWL)², and for fast day cruisers (LWL)³ work out about right.

Of course, it is possible to depart a good deal from the above figures in certain cases, but as far as the average boat goes, we are quite positive that the above values will give a well proportioned and satisfactory hull.]

For a Glass Cabin Boat

To the Editor of MoToR BoatinG:
Will you kindly give me the following informa

Will you kindly give me the following information:

What would be the best propeller for a hull 35 x 6 feet x 2 feet 6 inches, glass cabin cruiser, compromise stern. I have a 25 h.p. three-cylinder two-cycle, three-port Ferro motor turning 800 r.p.m.

I have at present a 20 x 27-inch three-bladed wheel, and am getting about 9½ miles. The motor is four years old and is in A-1 condition. If I put in leakproof rings in three cylinders would I gain anything?

Would it help to shorten my present exhaust pipe which runs to the stern, and is about 13 feet long, the engine being a little after amidships, by exhausting out of side—a distance of about 4 feet.

I am not getting the engine speed that I formerly did. If there are any suggestions you could make to me, they would be appreciated.

A. C. B., New York City.

[For the best propeller for a 35-foot glass cabin cruiser powered with a 25 h.p. three-

cylinder motor, turning 800 r.p.m., we would suggest one having three blades 21 inches in diameter by 20 inches pitch. Your present speed of 9½ miles an hour is very good indeed, considering the outfit, and we would not expect much improvement in boat speed by any change in propeller. Of course, we are basing our choice of propeller on the supposition that your statement of 25 h.p. and 9½ miles an hour is absolutely accurate.

In regard to leak-proof rings, as you say your motor is in A-1 conditon, we doubt if you could expect very much improvement by a change in rings. However, if you are losing compression at the present time, or are having any difficulties from a lubricating standpoint, we believe that the leak-proof rings will prove very beneficial.

Shortening the exhaust pipe from 13 feet in length to about 4 feet in length will give you considerable improvement, especially if there are many bends or elbows in the present exhaust line or if the diameter of the line is not great enough. A 25 h.p., two-cycle motor turning 800 r.p.m. should have an exhaust line of at least 2½ inches pipe size.]

Clearing a Fouled Propeller

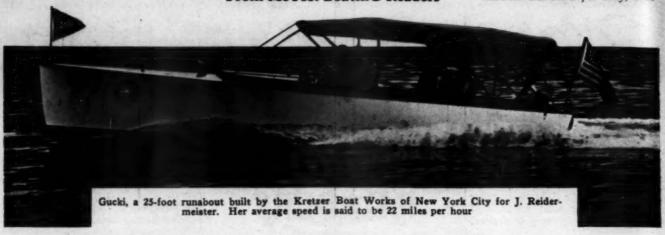
Clearing a Fouled Propeller
To the Editor of MoTor Boating:

Reading the answers in a recent prize contest on a method of clearing the propeller reminded me of an experience I had a couple of years ago at Lady's Harbor, Santa Cruz Island, off Santa Barbara. Lady's Harbor is a pretty little fiord on the north side of the island, from 125 to 150 feet wide and with a depth of 700 to 800 feet. The east and west sides are high, precipitous cliffs, and the south or land end, a little, clean, sandy beach. A nice, quiet protected anchorage, so we were told, and I have no doubt this is true—at times, but not when I was there. The easterly headland extends further to the north than does the westerly point, and the swell generally comes from the west; consequently, if a heavy sea is running, it strikes the easterly headland, causes a heavy back swell which runs into the harbor with a strong westerly drift, meeting the west side, to turn and rush through the fiord with a most delightful churning motion that keeps you some busy.

We had come up from the south a few days before for a couple or three weeks' cruising about the islands, and on our way up had struck a masty sea, which had—but that is neither here nor there, as I intended to tell you how we cleared a propeller.

This characteristic of Lady's Harbor is true of nearly all of the harbors at the west end of Santa Cruz, and as a heavy sea had been running for several days, and as the same back swell had been bothering us at Fry's where

Winchester, the remarkable new oil-burning vessel de signed by Cox & Stevens, for Peter A. Rouss, of the New York Y. C., and recently launched by the Bath I ron Works. With a length of 225 feet by a beam of 21 feet and 7,500 h.p., Winchester has a contract speed of 33 m. p. h. Photograph Copyright by Stabbins



we had put in for a breathing spell, and as we had three ladies in the party, and as there were several other "ases," the principal "as" being a desire to ascertain if Napuna had forgotten how to lie on an easy keel, I decided to gotten how to lie on an easy keel, I decided to try Lady's, where we were assured by one of our guests that we would find quiet water, he claiming that he had been there a couple of summers before for several days and that it was always as quiet as the proverbial millpond. After we had had our experience we mildly took him to task and were then informed that he had not realized that when he was there last it was quiet—outside.

Another guest had taken the wheel with the request that he be permitted to take her in. He had had a great deal of experience in handling sailing craft, but this was his first on a motor boat and he wanted to see if he could handle her.

Running into Lady's we found it was worse

handle her.

Running into Lady's we found it was worse than where we had left, but as it was near the moon hour we decided to anchor for lunch and then seek other quarters. He came about, headed out to sea, dropped both anchors, sent a skiff overboard with a line to make fast to the eastern side of the fiord, intending to ride to a bridle with stern lines out on either side, fastened to the cliffs. Everything went shipshape until the unexpected. The seas from the back swell were short and rapid, all of four or five feet high and the strong westerly drift made it necessary to keep the screw moving to back swell were short and rapid, all of four or five feet high and the strong westerly drift made it necessary to keep the screw moving to keep the boat in the middle of the channel. The boys who were handling the line had some difficulty in finding a place to make fast, but just as they were taking a bite, above the rush of the waters came a desperate cry, "Hey what are you doing? Give us more line." I looked up to see what was doing. The line had been jerked out of the hands of the boy on shore; the boy in the skiff had grabbed it and was holding on for dear life, but it was a case of either going overboard or losing the line. I glanced at the stern to see what was happening there. I saw the boy who had been passing the line out, gazing at his empty hands with a look of surprised and agrieved amazement. The slack had found the propeller and the propeller was having fun with the middle against both ends, and—the usual oldtime game was on, with the added zest of real danger for we were fast drifting helplessly toward the western cliff. Yelling to the skiff to come alongside we got over another line attached to a stern anchor and told them to "Pull!" Napuna was now flirting most desperately with those

western cliffs and it seemed to me I could see them holding out their jagged arms to catch and grasp her. Fortunately, the cliff was sheer and there was plenty of water—but—I did not know this. As we rode up on each swell, we'd come down with a whirling sidewise motion and each time I expected to hear her planks crash. The boys were pulling desperately at their oars to get the line out, and waiting for an order to throw the anchor overboard. I had a strong inclination to yell, "let her go," but to hold her I knew I must get out more line. I would glance toward the cliffs, measure the distance, and wonder if I could take a chance on another swell. Finally we were within three or four feet of the cliffs and I knew it was now or never, enough line out or not, when the guest at the wheel let out a yell, "All clear," and Napuna walked away from the cliff with a merry "ha-ha." The unexpected had happened again. The guest at the wheel afterwards remarked, "Me for sails—you don't have any such fool thing as that on a sailboat." Nevertheless, he had kept his head and by constantly going ahead and reversing had, by some unexplained method, cleared the propeller. We called in the skiff, and as it was being made fast to the davits one of the lads in the skiff made a grab at something, pulled it in and remarked, "What do you think of that?" It was an inch line over 100 feet in length, and came marked, "What do you think of that?" It was the line that had caused the trouble. It was an inch line over 100 feet in length, and came up worked back and forth into a skein about three feet long, and then wrapped as neatly as any window cord was ever wrapped by machinery, with one end outhanging about eighteen inches in length, chewed to smitherines.

It is these little unexpected incidents, when they end happily, that add a relish and flavor to the life.

Needless to say, we left Lady's and had lunch elsewhere.

F. J. T., Los Angeles, Cal.

Inland Route South of Sandy Hook

To the Editor of MoToR BoatinG:

Will you kindly advise me if you know of any compilation showing the number of motor boats in and around New York City, and the waters of New Jersey, and if so, the estimated value of the boats so involved.

The Legislature of the State of New Jersey in 1914 authorized the construction of a waterway con-

mecting Barnegat Bay with Manasquan Inlet, P. L. 1914, page 472. This authorization was made in pursuance of the policy adopted by the State in developing its inland waterways along the Atlantic Coast.

The Department of Inland Waterways of this State now proposes to abandon the projected waterway. This is of great importance to the owners of motor boats in the vicinity of New York and along the Jersey Coast, as if this short connection of about three miles were made it would afford—providing the Manasquan Inlet is improved—access to inside waters for the entire length of the New Jersey Coast from Manasquan south, and will give a port of entrance and refuge within twenty-five miles of Sandy Hook. Under the present conditions, a motor boat has to run as far as Barnegat Inlet, which is approximately fifty miles from the Hook, before there is any opportunity afforded of safety, and at the Inlet the shoals are very treacherous and dangerous. I am desirous of opposing the abandonment as being detrimental to the entire interest of the State as well as to such citizens of New Jersey and New York living in the vicinity of New York Harbor who desire to cruise down the New Jersey coast.

[The Commissioner of New Jersey City, N. J.

[The Commissioner of Navigation made an [The Commissioner of Navigation made an estimate of the number of motor boats in some of the ports, as of June 30, 1912, but admits that his estimate at the time it was made should be increased by 100 or 150 per cent in order to become nearer a correct estimate. The department has not attempted this work since that time and it is very probable that his figures should be increased at least 300 per cent. to obtain the number of boats at the present time.

I give below a few of the figures compiled by the Commissioner of Navigation as for June 30, 1912, for the ports to the northward of Sandy Hook:

New York, N. Y.							a	0				۰		.7,200
Albany, N. Y														
Patchogue, N. Y														
Sag Harbor, N. Y														
Greenport, N. Y														
Newark, N. J														
Perth Amboy, N.	J	0	0	8	ò	0	0	0	0	0	0	0	0	.3,000

15,900

As you probably know, there is no accurate way which the number of motor boats can even be estimated, and probably by multiplying the above figures by three or four, you will get a very close approximation of the number of motor craft in the waters referred to. We agree with you heartily in what you say in regard to the proposed abandoning of the waterway connecting Barnegat Bay with Manasquan Inlet.]



Bittersweet, a consistent winner in South Jersey waters last season which may repeat again this summer



Jack Tar, owned by J. P. Andrews, of the Red Bank Motor Boat Club, an excellent type of small hydroplane



of this branch of our corr spondence and are able to giv you accurate information e greatest promptness. with the Editor.]









One of a series of high-class switch-boards for use on boats up to 125 feet in length

ed or rd

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ergency case for use on board ship, containing sur geons' plaster, liniments, salves, forceps, etc.

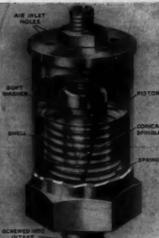




Double air cushion, part of a complete line of pneu-matic goods for marine use



A new fire ex-tinguisher which is highly







A pressed steel hydroplane having a speed of 28 m.p.h., which is listed with motor and all other equipment for \$1,000

Do not fail to write to the editor if you desire information concerning any of the above new things

Among the Clubs

What is Happening in Many of the Yachting Organizations in this Country-Plans Now All Completed for the Season's Activities Afloat and Ashore



U. S. Power Squadron Issue New Drill and Code Book

U. S. Power Squadron Issue New Drill and Code Book

The United States Power Squadrons have recently published a new drill and code book which is the most complete work of its kind published by any organization. The Rules Committee, which is responsible for most of the work, consisted of Commander C. N. Burnell and Lieutenant Commander Miller, of the Power Squadron of the Boston Yacht Club and Commander F. W. Shadbolt, of the Power Squadron of Huntington Bay.

The new code book contains practically all of the old maneuvering signals used in the 1915 code, together with many new ones which will make the drills for the coming season much more interesting and instructive than has been possible in the past.

Among the new features the following are particularly interesting and valuable: The international flag code is shown in colors as the frontispiece, and immediately following there is a very concise explanation of the various single flag signals and maneuvers. Opposite each explanation the code flag in question is shown in colors. This makes a very valuable arrangement for members who are not thoroughly familiar with the different maneuvers and who are obliged to use the drill and code book during the drills. The explanation of these single flag maneuvers is much more complete than in past drill books and should eliminate much of the confusion which has resulted in some cases. The only new single flag maneuvers are J and K which refer to boats right 45 and boats left 45°, respectively.

Many new maneuvers are made possible by the addition of a new repeater flag which will be used on the same hoist, either shove or below the single international code flags. This is a yellow pennast with the luff one half of its length. The inner portion is a triangle of blue, similar in shape to the flag itself, and it is one-half the length of the luff and placed midway upon it.

The repeater used with flag H orders the column for the power of the post column for countermarch outside or inside, double column form, column of fours

as valuable to the squadron members themselves as to the local squadron difficials.

The regular club code, which is used by practically every representative yacht club in the country, is included in the new code book, together with the various havy systems for signaling with flags, lanterns or flashing lights. Considerable space is United States storm and hurricane warnings for small craft are explained, and the signals shown in colors. Distress signals, both for day and night and the international life-saving signals, are included as well. The rules committee has drawn up a list of the boat gear and equipment which should be aboard every squadron boat, and this list has been included in the new code book. Another very important addition to the book is the chapter on handling boats, which gives much valuable information which every member should study and become familiar with. The question of yachting and flag etiquette is given considerable space, and there is also a valuable table which shows how, when and where to display flags on motor boats.

The chapter on squadron yacht routine with the sections on distinguishing flags and signals, dressing ship, salutes, officers in command of anchorage, squadron routine, boat service, etc., should prove valuable to all yachtsmen.

The new by-laws of the United States Power Squadrons, Inc., as adopted at the last annual meeting are privated in full in the new code book.

Club Annual Regatta at Tacoma, Wash.

Honey Boy, owned by N. P.

Club Annual Regatta at Tacoma, Wash.

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Honey Boy, owned by N. H. Latimer, of the Seattle Yacht Club, was the first to cross the line in the finish of the motor cruiser race from the Seattle Yacht Club to the Tacoma Yacht Club at Point Defiance Park. Thousands of interested spectators thronged the heights at the park and witnessed the splendid, card of events featured by the Tacoma Yacht Club.

The time of the Honey Boy was 2 hours 11 minutes and 24 seconds. Sans Souci II, F. Schmitz, of the Seattle Yacht Club, was second at 12:17:36, and corsair, B. F. Jacoba, of the Tacoma Yacht Club, was third, coming in at 12:47:46.

Honey Boy made a handicap start from the Seattle Club at 9:58:36. Sans Souci left at 9:48:06, and Corsair at 9:58:36. Sans Souci left at 9:48:06, and Corsair at 9:58:36. Souch souch the Tacoma Club, and a big revival of the sport on Puget Sound.

For the first time in many years the Seattle and Tacoma Club, and a big revival of the sport on Puget Sound.

The judges of the races were George Lewis Gower.

tion Day, marking the opening or the season to marking the opening of the sport on Puget Sound.

The judges of the races were George Lewis Gower, W. H. Cushman and Capt. W. F. Andrews. K. K. Rathfon was starter.

The Tacoma cruiser race, which started at 1:59 P. M., when Scimitar, owned by P. H. Bowman, got away first, was an exciting event. It was over a course of 14 miles, to a buoy near the St. Paul dock, thence to a buoy at Manzanita Beach, with an electric searchlight as a prize. Ethel showed her heels to the rests of the eight entries by winning in I hour and 38 minutes. Elizabeth Ann, owned by Dr. Whitacre, was second, about five minutes behind Ethel. The next five hoats to finish came in to the finish line from a mile out all in a bunch, making a pretty end to the contest.

lar yacht club enthusiast, died the previous Satur-day. Harry Pelletier, Sam Haskell and R. C. Doud helped to make things pleasant for the visi-tors as members of the Tacoma Club's entertainment

Catalina Cruiser Record Broken

Catalina Cruiser Record Broken

James M. Shuck and Frank P. Walton, of Los Angeles, drove a consistent winning race in the Memorial Day Regatta, of the Los Angeles Motor Boat Club, beating the previous cruiser record for the 28.2 miles from Wilmington to Avalon by over 30 minutes in the 32-foot Hand V-bottom express cruiser Shawnee, powered with a 60 h.p. Loew-Victor motor and taken out to the Coast this apring by A. H. Hayes. She finished in 1 hour 48 minutes 30 seconds.

Earlda, winner of second prize, is a new mahogany rimmed hydroplane and the finest boat yet built by Joe Fellows, the Coast's famous boatbuilder at Wilmington. She is 35 x 8 feet, powered with a 55-x, six-cylinder Sterling motor. Earlda's time was 1 hour 49 minutes 40 seconds.

The third prize was won by Junipero, Vice-Commodore J. T. Dickson, 2 hours 37 minutes 36 seconds.

The tairs prize
Commodore J. T. Dickson, 2 hours 37 minutes so
seconds.
R. J. Cope's Ionia was winner in the class for
cruisers over 38 feet, with Commodore J. C. Wright
in Isabel W., taking second and time prizes in 2
hours 54 minutes.

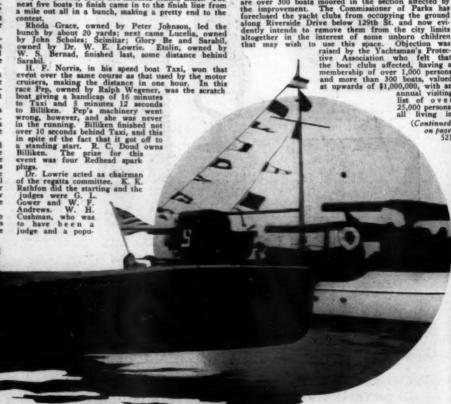
Hudson River Clubs May Be Ejected

Hudson River Clubs May Be Ejected

A meeting was held by the Harbor Line Board at the Army Building recently before Colonel Abbott to secure permission of the War Department to extend the pier line and recede the land from 143rd to 153rd Sts. to permit of an anchorage for the 300-odd boats that are now located in that section of the Hudson River—which will find themselves without home or shelter if the present West Side Improvement plans go through without making some reservation.

The permission was asked by the Dock Commissioner R. A. C. Smith, a well-known yachtsman himself, who very ably presented the needs of the motor boat owner in the vicinity affected. The meeting was attended by representatives of several civic associations, and a representative from the Recreation Commission, the Borough President's office and Commission of Parks in person. The latter in a very suave manner after intimating that he was in favor of caring for the motor boat interests is reported to have insisted that the land from 143rd to 153rd Sts., which will be made available upon the completion of the improvement, should be given over for playground purposes notwithstanding that by the plan his department is to receive 45 acres of additional park space. He showed little consideration for the yachtsmen who are to be thrown out of their homes as well as the immense amount of money invested in the boats. Both each the representative from the Borough President's office seemed to think the clubs and the boats can be taken care of further up the river. They did not indicate where, but merely that there is probably room for them further up the river. They did not indicate where, but merely that there is probably room for them further up the river. They did not indicate where, but merely that there is probably room for them further up the river.

The Commissioner of Parks presented a plan which he th



Peter Pan, James
Simpson's latest displacement racer
which won in the
annual open races of
the Columbia Yacht Club at a speed of 31.2
miles per hour



A Real Ocean Race for Express Cruisers

The First Race of Its Kind Ever Attempted For Demonstrating Reliability, Endurance and Seaworthiness-Valuable Trophy To Be Presented by MoToR BoatinG for a Race Around the Cape

T was just eleven years ago that the first long distance ocean race for cruising motor boats was held. This race was held by the Knickerbocker Yacht Club, starting from a point near their clubhouse at College Point, with the finish line laid off in Marblehead Harbor, a distance of about 280 nautical miles. This was on July 22, 1905, and it clearly demonstrated to the yachting world that the motor cruiser was a safe and sane proposition for ocean work.

Talisman, a little trunk cabin cruiser of only 32 feet 8 inches over all length and powered with an 8 h.p. Murray & Tregurtha motor, won the cup on corrected time in addition to being the first of the twelve starters to finish. She required 45 hours 24 minutes 56 seconds to ake the 280-mile run, which is an average speed of slightly better than 6.1 knots.

Since 1905 the ocean race between New York
d Marble-head had been held and Marbleevery year speed record from over hours 23 course wasth Since 1911

been held for

until 1911, the being lowered 45 hours down to minutes, over a trifle shorter than original one. such race has

various reasons, because - a

races were planned over more or less inland courses which seem to prove more popular to the owners and crews of the competing boats. However, during the past year or two there seems to have been a reaction and a desire to demonstrate what the newer types of motor craft will do in the kind of a test which they cannot get on protected waters, or narrow channels. This is especially true with the express cruisers, a class which is appearing in very considerable numbers this year.

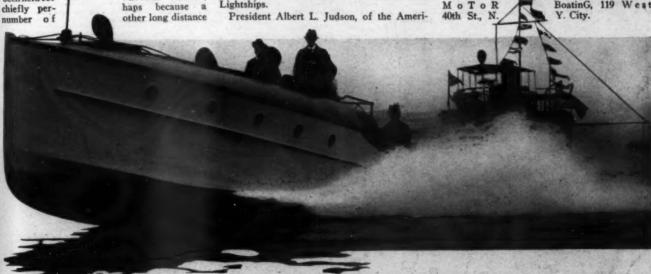
Many claims have been advanced by the

designers, builders and owners of these new express cruisers as to their capabilities under varying conditions, and many requests have been heard on every side for a race over a course which would test these boats to the limit. Principally for this reason the Long Island Sound Power Boat Association, now the leading motor boat organization on the Sound, has planned to once again take up ocean racing, and will hold a race on July 29, with classes for cruisers and express cruisers, starting from the New York Athletic Club at Whortleberry Island and finishing off the clubhouse of the Boston Yacht Club at Marble-bead, Mass. The boats will be obliged to pass south of Cross Rip and Handkerchief, north of Stone Horse and south of Pollock Rip Slue can Power Boat Association, has presented a cup to be rewarded to the winner of the cruiser class, and MoToR BoatinG has presented a trophy as first prize in the express cruiser class. Both of these prizes will become the absolute property of the owner of the winning boat, there being no strings whatsoever tied to them.

The event will be officially known as th New York and New England race and will be sanctioned by the American Power Boat Association. The starting line will be between two stake-boats flying New York Athletic Club flags anchored east of Whortleberry Island. Both classes will start together at 9 o'clock on the morning of Saturday, July 29, 1016. 1916

Class A will be for express cruisers, as defined by Rule VI, Division II, of the 1916 A. P. B. A. rules, of less than 70 and more than 35 feet, LWL. Class B is for cruisers of less than 65, and more than 30 feet LWL, and whose rating is not less than 90 per cent. of the waterline length. Boats of less rating will be handicapped on this minimum. Entries will close at noon, July 24, at which

urement certificates ceived and should be time measmust be re-sent to C. F. M o T o R Chapman, care of BoatinG, 119 West Y. City.



Flyaway III, winner of practically every long distance cruiser race last year. Her former 5½ x 6 six-cylinder Van Blerck has been replaced by an eight-cylinder 6 x 6 motor of the same make. Without doubt Flyaway III will make an effort to win the cup offered by MoToR BoatinG

Motor Boatmen Join Naval Cruise

Many Already Enrolled for the First Part Aboard the Battleships-The Training Cruise for Motor Boats to be Held During the Final Week

The Navy Department has authorized a naval training cruise for civilians which will begin August 15, 1916, and last until September 12, 1916. The course of training is to be given on board reserve battleships. Civilians will be recruited by naval districts and the ships will be allotted according to the number of recruits accepted in each district.

QUALIFICATIONS FOR ENROLL-

Prospective recruits must be citizens of the United States, in good standing and vouched for by at least two reputable citizens whose standing are known to the recruiting officer.

Age 19 to 45, inclusive. Minors must have the consent of parent or guardian. Must pass a prescribed physical examination. Previous service in the Army, Navy or Marine Corps, if any, must have been honorable.

OBJECT OF CRUISE

To help equip properly qualified men to act as reserves in time of war or national emergency by giving them a course of training on warships under naval officers and naval discipline.

To loster a patriotic spirit and give to civilians some knowledge of the savy and the naval requirements of the country.

To interest civilians in naval matters so that by taking future courses of training and by study many can qualify for acting commissions after taking the necessary examination.

OUTLINE OF THE CRUISE

Recruits whose applications have been approved by the Navy Department will be notified to report on board the ship to which they have been assigned at a given time and place. Their civilian clothing will be turned over for storage, and they will be supplied with a sufficient outfit of uniform clothing, which will be charged against their deposit. After the recruits are on board, the ships will leave their respective naval districts and cruise for a period of about three weeks. During this time recruits will be given a practical instruction in the duties required on board ship.

A portion of the day will be given up to the study

a practical instruction in the duties required on board ship.

A portion of the day will be given up to the study of special subjects, which will be largely optional, so that recruits who have aptitude for a knowledge of such subjects as navigation, signaling, radio work, steam or electrical engineering, etc., may have an opportunity to specialise. Boat drill will be given and landings made, and recruits will be taught the manual of arms and military formations. During the final week of the cruise the ships will return to the naval districts whence they came, and, in addition to the courses of instruction, recruits will be given a general idea of their own naval district and its defensive problems.

At the end of the four weeks the ships will return

a general idea of their own naval district and its defensive problems.

At the end of the four weeks the ships will return to the ports whence they came, and the recruits will be discharged.

It is probable that the ships for receiving these volunteer recruits will be stationed at Portland, Me., Boston, Mass., New York, N. Y., Philadelphia, Pa., Norfolk, Va., and Charleston, S. C., but this cannot be stated with certainty at this time, as it will depend upon the number of recruits from the different dis-

METHOD OF ENROLLING

Recruits may enroll at any Navy recruiting station or sub-station. Recruits that apply at a sub-station will be given a preliminary examination and the recruiting officer and medical officer will visit each sub-station twice a month for the purpose of enrollment. The main stations will keep their respective sub-stations informed as to the dates of their visits in order that the recruits may be assembled in time for enrollment.

After he has qualified an applicant will be required to sign a form of application for enrollment addressed to the Secretary of the Navy, which will be supplied by the recruiting officers.

The application and enrollment blanks of recruits will be sent by the Bureau of Navigation to the respective ships when recruits are ordered to duty, for the purpose of record and identification.

OBLIGATION

The obligation to defend the country in case of need already rests on all male citizens of military age. At the expiration of the cruise, the recruit will announce his intention as to whether or not he will volunteer for service in the Navy in case of war occurring within the next four years.

At the end of the training cruise a recruit will be given a sertificate signed by the commanding officer of the ship specifying the nature of the duties he has performed, the efficiency he has displayed, and the rating he is best qualified to fill.

DISCIPLINE
Before taking this cruise Before taking this cruise, recruits must signify their willingness to subject themselves to and be governed by the U. S. Navy Regulations and Instructions, and to obey all orders issued by duly constituted naval authority, and to perform such duties on board ship as may be regularly assigned them.

For grave or repeated infraction of regulations and instructions, the commanding officer reserves the right to land the delinquent in the nearest United States port.

EXPENSE

Each man when reporting on board ship will be called upon for a deposit of \$30, which will cover the cost of his board for the cruise and provide him with the necessary outfit of clothes. Should the actual cost of board and outfit be less than the amount of deposit, the difference will be refunded. The applicant must also pay the costs of transportation to and from the ship.

TRAINING CRUISE FOR MOTOR

TRAINING CRUISE FOR MOTOR BOATS

During the final week of the cruise the ships will return to the naval districts whence they came, and residents of the districts who own yachts or motor boats which would be useful as auxiliaries in time of war will be given an opportunity to operate in conjunction with the ships.

Although it is not essential, it is hoped that yacht and motor boat owners who intend to participate in this final week of maneuvers can take the preliminary weeks of instruction to be given on the cruise.

Each boat will be inspected by a board of naval officers in order to determine its usefulness in time of war. The boats will then be organized into divisions according to services they are best qualified

After organizing, it is the intention to give in-

struction as follows:
Scouting, searching, patrolling, signals, maneuvering by signals, defense of naval district, study of coast, piloting, etc.
Owners who wish to enter their boats must make application to the Secretary of the Navy at once, stating the name of boat, home port, characteristics, etc. Owners who wish to take the training cruise must enroll at a Navy Recruiting Station; other who have made application will be enrolled aboard ship when they report for duty and their boats have been inspected and passed by a board of naval officers.

have been inspected and passed by a board of naval officers.

In connection with the Department's plans to mobilize the privately owned motor boats of the country for a patrol service, the Department has been investigating the types of motor boats that would be suitable for this service, with a view to laying down for the information of the motor boat public the essential characteristics which such boats should have. After consulting a number of maval architects who specialize in motor boat work, and after obtaining the views of a number of men who have the means to acquire boats of this character, the Department has arrived at the conclusion that there are only a very limited number of men who would build boats to exactly such plans as might be issued by the Navy Department, especially if the boats were designed primarily as patrol boats without regard to their use for yachting purposes.

The essential characteristics which a patrol boat should have for all around service are: Adequate speed, not less than 30 miles an hour; sufficient aize for seaworthiness and habitability, not less than 65 feet long (length more nearly approaching 109 feet would be better); a sufficiently rugged construction to permit mounting a gun not smaller than a three-pounder.

The minimum characteristics of the smallest boat suitable for a limited patrol service are considered to

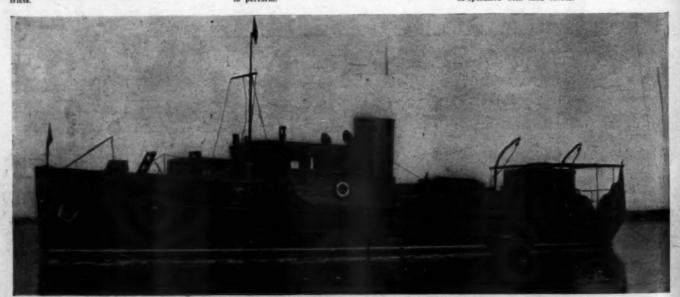
The minimum characteristics of the smallest boat suitable for a limited patrol service are considered to be the following:

suitable for a limited patrol service are considered to be the following:

Speed not less than 25 miles per hour; length not less than 45 feet, mounting a one-pounder gun. For the purpose of advertising, stimulating interest, and making it possible for owners to form definite opinions as to whether boats of such size and arrangement wii! suit their requirements, the Department has proposed plans which will represent each class of boat. It is hoped that a boat of each class can be built by the Government and made available for inspection by the public.

The above are the ideal types and the Department realizes that there are very few boats in commission in this country at present that will meet these requirements, but it will take advantage of the patriotic spirit that has promped owners of yachts and motor boats to offer their services to the Government, and will assign boats, whatever their speed, to duties they are best qualified to fill.

The duties can be divided according to the locality, into harbor duty, harbor entrance duty, and sea duty. Motor boats can be used in time of war as (a) dispatch boats, (b) harbor entrance patrols, (c) offshore patrol, (d) guard boats for capital ships, (e) submarine destroyers, (f) mine layers, (g) mine sweepers, (h) mine field patrols, (i) co-operative with land forces.



Daraga, which will act as mother ship for the boats of the patrol squadron during the training cruise for motor boats. This boat is owned by Commander Davis of the patrol squadron. She is 77 feet in length and is powered with two four-cylinder, 6½ x 9 Sterling motors

Yard and Shop

An Open Letter to All Boat Owners

DEPARTMENT OF COMMERCE,
Office of the Secretary.
General Letter No. 116,
Bureau of Navigation.
Washington, May-13, 1916.



The Evinrude single-cylinder me-ter and a small beat which one efully propelled from New York

their interest to increase safety and pleasure in the use of these boats.

Your inspectors are to report to you, of course, every infraction of the law, technical and otherwise. No discretion is lodged in them to discriminate in any particular.

It is not the purpose of the Department, however, to harass motor boat owners. Therefore, when there are reported to you technical violations not involving the safety of those on the vessels, you may submit such technical violations to the Department for instructions without securing from the offender an application for relief from the penalty. Your report should state all of the details of the violation. In proper cases the Department will authorize you to close the matter without further action, except to notify the offender wherein he has violated the law and that the offense must not be repeated.

Please bear in mind it is essential that we have the co-operation of motor boat owners and organizations if permanent results are to be obtained. Your inspections must be made with this in mind. Please get in touch with the yacht clubs and organizations in your district and endeavor to enlist their assistance, reporting to the Department the steps you take along this line.

(Signed)

WILLIAM C. REDFIELD, Secretary.

The Portable Motor for the Dinghy

The Portable Motor for the Dinghy
In the early days of the development of the portable motor, boat owners were a bit inclined to look askance at the little "stern-kicker" which had so quickly jumped into favor among fishermen, hunters and summer resorters.

To-day, however, no motor boat owner would willingly be without one of these little "detachables" if he but knew of the all-round utility and service to be obtained from one of these small power plants.



When it's necessary to anchor out in the harbor, portable, hitched to the stern of the tender or dinght is just the thing for making the trip with guests supplies. It's an easy matter to unclamp the mot from the stern, stow it in a locker and lash the dink on deck when starting on a long cruise.

For running around the harbor, fishing, etc., a dinghy, with a portable at the stern, is far cheaper to operate, and easier to handle, than the large boat. It takes but a half turn of the flywheel handle to start it, and you can be off and away before you could even "jiggle the carbureter" of the large engine. A supply of gasoline and cylinder oil is always aboard, so it is a simple thing to keep the portable's tank filled.

Then there are times when the little detachable comes in mighty handy to take the big boat in tow. It's no uncommon occurrence to lose a wheel, twist off a shaft, or become otherwise disabled. Many and many a motor boat owner has been helped over a mighty ticklish situation through the aid of the outboard motor attached to the stern of the dinghy.

The Evinrude Motor Company, 498 Evinrude Block, Milwaukee, Wis., publishes a very interesting book with a chapter devoted particularly to the use of the Evinrude detachables for motor boat owners and yachtsmen. Considerable space is also devoted to its 1916 models, including the well-known single-cylinder models, 2 and 3½ h.p., of which there are over 60,000 in use, and the four-cycle Twin. Single- and two-cylinder two-cycle inboard models, for permanent installation in the speed cannee, and also boats of launch design where the space is available for inboard use, round out the Evinrude line of motors.

New Line of Propellers

The American Manganese Bronze Co., of Holme burg, Philadelphia, Pa., has announced the forthcoming production of a new line of propellers which will be known as the Dyson models. Capt. Chas. W. Dyson, U. S. N., who is a recognized authority on screw propellers and who is the head of the designing department of the Navy Engineering Bureau, has designed propellers which are used on many of the L. S. battleships as well as on merchant vessels. The American Screw Propeller Co., of 1520 Sampson St., Philadelphia, Pa., is now carrying on the work of making designs for the first-mentioned concern with Capt. Dyson as consulting engineer. This line of wheels will be complete and will embody the features of efficiency guaranteed by the reputation of Capt. Dyson.

A New Gasoline Economizer

The Auto Economy Co., of 223 West 49th St., New York City, is manufacturing the Automatic Gas Economizer, which is an auxiliary air device for installation in the intake pipe of a gasoline engine. It is declared to keep the mixture of air and gasoline in perfect proportion at all speeds, thus effecting an economy in the consumption of fuel, and it is stated also to be useful for the purpose of cleaning out the carbon and for simplifying starting in cold weather. For removing carbon three squirt gunfuls of plain water are emptied into the top of the Economizer when the motor is running and very hot. The water is turned into live steam which gets under the carbon and blows it out. For priming, gasoline is squirted into the top of the Economizer.

Brilliant Metal Polish

Brilliant Metal Polish

The F. M. Trafton Co., of 175 Federal St., Boston, Mass., is recommending its Brilliant metal polish for cleaning and polishing metals of all kinds. It is claimed for this polish that it consains no acid and is, therefore, non-injurious to metals or to the hands, while it resists damp, foggy and salt air very effectively. It is also stated that it is not dirty, gummy or greasy, and that it has no objectionable odor. It is put up in liquid form in one-sisth pint and up to one-gallon cans, and as a paste in three-ounce, one-half-pound and one-pound boxes and five-pound pails.

one-gallon cans, and as a paste in three-ounce, one-half-pound and one-pound boxes and five-pound pails.

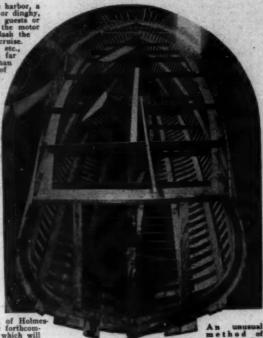
New Fleet of Speedway Yacht Tenders On the Way

The Gas Engine & Power Co., & Chas. L. Seabury & Co., Cons., of Morris Heights, New York City, are delivering this summer many new yacht tenders of their well-known Speedway models. The popularity of these models has increased year by year, and there are now a great many yachts equipped with them. The Speedway people build two distinct types of tenders—the stock open model and the coupé ahelter cabin model. Of twenty new tenders delivered in June, one-third were the coupé model. The tenders averaged in length from 16 to 35 feet, and the power installation in each case was a high-duty aluminum base and frame Speedway engine. These engines are especially designed for yacht tender work where light weight and reliability and durability are important factors. In addition to those tenders already built several others are on the way.

Two Sterling Folders

Two Sterling Folders
The Sterling Engine Co.,

The Sterling Engine Co., of Buffalo, N. Y., has recently issued two new folders covering two of its newest engines. The folders conform in size and character to those already published by that concern and are intended to be incorporated in the loose-leaf Sterling catalogue. They are attractively printed and illustrated with halftones. One of the folders discusses the Sterling Balanced Six which is the new six-cylinder Model F machine with counterbalanced crankshaft. The other is de-



An unusi method constructi is put in aft at is of Kro anson by Ale motor will

criptive of the new Sterling Kid 10 h.p. machine thich is an improvement on that very popular engine that was originally brought out a few years ago.

Bulletin of Great Lakes Craft

Bulletin of Great Lakes Craft

The Great Lakes Boat Bldg., Corp., of Milwaukee,
Wis., builder of Great Lakes Craft, has just published in folder form a descriptive story of three
cruisers which combine in a thoroughly standardized
boat of the highest grade the three elements of speed,
seeworthiness and comfort. The boats taken up are
a 36-foot modified V-bottom hunting cabin craft,
a 31-foot pure displacement hunting cabin craft,
a 31-foot pure displacement hunting cabin type "demi-express." All of these boats are illustrated in photographs and line drawings of both exterior and interior.

The Great Lakes Boat Bldg. Corp. desires to extend through us a cordial invitation to all to visit
its Milwaukee shops, which are reputed to be the
largest and best equipped of their kind in the United
States.

The Norma Co. Elects New President
At the annual meeting of the Norma Co. of America,
held recently in the offices of the concern at 120,

The Norma Co. Elects New President
At the annual meeting of the Norma Co. of America,
held recently in the offices of the concern at 1790
Broadway, W. M. Nones was elected president and
treasurer. Prior to this Mr. Nones was secretary and
treasurer as well as general manager of the company; in his new position he will continue to exercise the general management of the firm. The accompanying portrait shows him at work at his new dest.

A recent announcement of this company through
Mr. Nones has to do with the purchase of a ten-acre
factory site at Elmhurst on the outskirts of Long
Island City. The property fromts on Queens Boulevard and has a depth
1,000 feet, abutting in
upon the main line of



W. M. Nones, the newly elected president of the Norma Company of America, manufacturers of ball

Island Railroad, from which a siding will be built directly to the plant. The plans now under way provide for the immediate erection of a four-story reinforced concrete building measuring 70 x 350 feet. The architects for the new factory are Francisco and Jacobus, of New York City, and in the design of the building every modern improvement looking toward the maximum production efficiency will be embodied.

Motor Barge with Unusual Features
Inco No. 1, which is the first of a fleet of motor barges that the Inland Navigation Co. proposes to operate on the Mississippi River, had its initial trip from St. Louis to New Orleans a short time ago and proved satisfactory in every respect. This craft is an entirely new idea in barge construction, four 80 h.p. internal combustion motors, using kerosene as fuel, being installed to operate the boat. The barge is 240 feet long by 43 feet beam and has a draft of 71/3 feet with a total carrying capacity of 1,600 tons. The sarge, is carried on deck under a superimposed cargo har, and a gantry crane is installed for removing the stop hatches and for handling the cargo. Wireless superimposed cargo har, and a gantry crane is installed for removing the stop hatches and for handling the cargo. Wireless superimposed cargo har, and a gantry crane is installed for removing the stop hatches and for handling the cargo. Wireless superimposed cargo har, and a gantry crane is installed for removing the stop hatches had for handling the cargo wireless supported the company of the horizon in a pump in the low which draws in water on one side and forces it out at the other in order



Anna III, a 18-mile cruiser, owned by George Jonas, of Bridgeport, N. J. The heat measures 45% x 13% x 3% feet and is powered with a 40-45 h.p. Buffalo

to assist turning in narrow quarters or in a swift current.

Porbeck Rolled Steel Boats

Porbeck Rolled Steel Boats

The Porbeck 'Steel Boat Co., of 2017 North Broadway, St. Louis, Mo., lays particular emphasis on the durability of its rolled steel boats, this method of construction being declared correct in all respects. In rolling the steel the metal sheets remain uniform in thickness, thus giving great strength where it is needed, while the thickness of the metal is such that greater strength than is actually required is given in all parts. Only the best quality of galvanized boiler sheets of heavy gauge go into the construction and these are guaranteed to be puncture-proof. A feature of the construction of Porbeck boats is the new put-together idea whereby the customer makes a saving in freight charges. The boat is parily knocked down and is shipped at raw material rates. In assembling the boat the customer has no riveting or soldering to do, as the different parts lock securely together.

Pacific Coast Agent for H. & N.

The H. & N. Carbureter Co., of 1790 Broadway, New York City, announces the appointment of J. Arthur Scott as manager of its Facine Coast branch. Mr. Scott, who is well known to the trade as a gas engine expert, held a similar position prior to this with the Master Carbureter Co. It is stated that because of the exceptional ability of the H. & N. carbureter to handle all fuels from distillate to the highest grade of gasoline, Mr. Scott expects to capture a large share of the western carbureter business. The new branch office will be located at 617 South Olive St., Los Angeles, Cal.

Auto Electric Takes Eisemann Agency Auto Electric Takes Eisemann Agency The New York office of the Eisemann Magneto Co., of Brooklyn, N. Y., has recently been discontinued, the Auto Electric Service Co. taking over the stock, machines, etc. The latter company will continue at the same address, 345 West 55th St., New York City, and will act as the Eisemann Service Station for New York City and vicinity including Westchester and Rockland Counties in New York State, and Bergen, Hudson, Essex and Union Counties in New Jersey. The owners of the Auto Electric Service Co. are Henry Berlinghof, for the past three years service manager of the Eisemann Magneto Co., and George Strasser, foreman for the last ten years of the Eisemann repair department. Wim. B. Clowes succeeds Mr. Berlinghof in the management of the service department of the Eisemann Co. a plant in Brooklyn.



A carload lot of Model F Sterling eights packed and waiting for shipment to Italy.



Thomas Shibe, owner of the Philadelphia Athletics, of in Virginia, his 28-foot managany runabout, built by Riarck is casionally seeks surcease from worry by a swift spin the Great Lakes Boat Bldg. Corp. A 65 h.p. Van

Wheeler Ship Bldg. Co. Incorporates

The Wheeler Ship Bldg. Co., Inc., of Huntington,
L. I., recently announced the acquisition of the plant
and equipment of the former Akin-Wheeler Co. The
new firm has a capital stock of \$25,000. The business
has been entirely reorganized and placed upon a sound
financial basis.

New Exporters in Frisco

New Exporters in Frisco

In view of the excellent opportunity offered American manufacturers at this time to market their products throughout the Orient and islands of the Pacific Ocean and South Sesa, the Bailey Drake Co., of 149 New Montgomery St., San Francisco, Cal., has recently entered the export field and extended its operations to include the Philippine Islands, Japan, China, Australia and New South Wales. It is the company's intention to represent American manufacturers in these countries in exactly the same capacity as it has represented eastern manufacturers on the Pacific Coast. Representatives of the concern are already on hand in Sydney, Australia, in the Philippine Islands, in China and in Japan, and these men expect to cover their territory regularly and to handle all classes of merchandise which are salable, and on which a volume of business can be done. The Bailey Drake Co. is looking for American accounts among the marine engine manufacturers to introduce in the various sections mentioned.

The Martin

The Martin Aeronautic Motor

More Speedways On the St. Lawrence

More Speedways On the St. Lawrence

E. S. Woodward, of New York City, whose home is one of the finest in the Thousand Islands colony, recently placed his order with the Gas Engine & Power Co., & Chas. L. Seabury & Co., Cons., of Morris Heights, N. Y., for two of their latest model Speedway motors. Mr. Woodward has used Speedway motors for the last ten or twelve years and has owned them in various powers from 5 to 150 h.p., his fleet of boats comprising both speed models and cruisers. Last year he had constructed for him on the St. Lawrence a 50-foot runabout and equipped it with a Speedway motor and an entire outfit of Speedway fittings and hardware. The engine was a six-cylinder 150 h.p. motor which gave a speed of 30 miles an hour, but Mr. Woodward has decided to replace it with one of the new motors which he has bought—a 200 h.p. eight-cylinder Speedway from which he expects a speed of 35 miles an hour. The other new engine which he has purchased is a six-cylinder lost. h.p. machine for equipping a 40-foot runabout that is now under construction.

Shipping Sterlings by the Carload

be operated at this high speed for long continued periods without stopping.

Anticipating the present scarcity of raw materials used in building marine engines, the Sterling Engine Company has been able to make domestic deliveries of its Model F eight-cylinder motors promptly, notwith-standing the heavy export shipments they are steadily making.

Virginia

Virginia

Thomas Shibe, of Philadelphia, owner of Shibe Park, and the Athletics, takes as a relaxation from baseball a spin in his new 28-foot mahogany runabout, Virginia. This little boat has recently been delivered to him at Philadelphia by the Great Lakes Boat Bldg. Corp., of Milwaukee, Wia. She is one of this concern's standardized stock model six-passenger concave V-bottom mahogany runabouts and her power plant is a four-cylinder 5½ x 6-inch Model E4 Van Blerck, developing 65 h.p. at 1,000 r.p.m. The engine drives the boat at an easy 28 m.p.h. without any fuss, noise or vibration, and Mr. Shibe is delighted with his outfit.

Stewart Carbureter Catalogue

l in its literary



Acronautic Motor

An interesting test in which the Martin aeronautic motor, designed by Genn L. Martin, Carlton Wilby and motored by Scripps. Dr. I. Haines, of Brookine, developed 183 b.h.p. at 1,326
r.p.m., was recently conducted at the Aero Testing Motor Laboratory of the Navy Yard at the Aero Testing Motor Laboratory of the Navy Yard at Washington, D. C. The motor tested is a new aeroplane machine of the V-type having eight cylindera with 454 x 7-inch stroke. The engine weighs 434 pounds complete with two magnetos and two carbureters. makeup has been issued by the Detroit Lubricator Co., of Detroit, Mich., for the purpose of making plain the principle on which the Stewart carbureter operates. It was thought by the makers that something a little different from the ordinary catalogue would be required, as this carbureter operates on a distinctive and hitherto unused principle. The main part of the booklet takes up in simple terms a description of the design and construction as well as the operation of the carbureter. Diagrams and half-tones of sectional views are included, while prices of all models and parts are also given.

Norma Ball Bearing Literature

A quantity of new hall bearing literature has been recently put out by the Norma Co. of America, of 1790 Broadway, New York City. This publicity mater which is being distributed to interested persons is unique in form and substance, comprising simple single-fold leaflets with a minimum of text, but with a punch in every sentence.

a punch in every sentence.

Mosler On Spark Plugs

A. R. Mosler & Co., of Mt. Vernon, N. Y., manufacturers of Vesuvius Superior and Spit-Fire plugs, announce the 1916 edition of Mosler on Spark Plugs, a spark plug reference book, which lists the style and type of Mosler plug best suited for individual motors and also shows the various ignition systems and devotes considerable space to the proposition of spark gaps. This interesting booklet is published for the convenience of jobber, dealer and owner.

Wisconsin Folder

Among the recent additions to marine engine litera-ture is a new folder issued by the Wisconsin Motor Mfg. Co., of Milwaukee, Wis., which illustrates in halftone the various types of Wisconsin Consistent marine motors, and also well-known boats which are powered with them. The folder is very attractively conceived and printed.

Correction Notice

Correction Notice

Two or three mistakes crept into the article on page 18 of the June issue descriptive of the 48- and 40-foot express cruisers of the military type, manufactured as a very popular standardized product of the Great Lakes Boat Bldg. Corp. of Milwaukee, Wia The 48-footer was credited with a speed of only 15 m.p.h. whereas we learn from the Great Lakes company that she is actually capable of 22-24 m.p.h., depending on the propeller used and the engine speedan unusually satisfactory showing, power considered, for a boat of her very heavy construction and her accommodations. Sleeping accommodations are provided for eight instead of six persons as stated by us, there being two upper and two lower berths in the owner's stateroom, each having a width of finches. Likewise, the 40-footer described is cuipped with four extension berths 42 inches wide and cape with four extension berths 42 inches wide and cape ble of sleeping two each, thus making his boat's accommodations satisfactory for eight persons instead of four as erroneously stated by us. Camp Palso, the modified V-bottom runabout in the Yard and one of the well-known Great Lakes Craft built by the Great Lakes Boat Bldg. Corporation.



A 72-foot cruiser of the out-and-out scout type, designed by Swasey, Raymond & Page, for Co Harold S. Vanderbilt. Two of the powerful new Twin Six Van Biercks are installed

Hydes Used on Sea Sleds

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In connection with the Hickman Sea Sleds, the first cruiser of which is described on another page of this issue, it, is interesting to note that the Murray & Tregurtha Co., which is building boats of this type in the United States, is using the famous Hyde wheels which are manufactured by the Hyde Windlass Co., of Bath, Me. We are informed that Hyde wheels were used on the Sea Sled cruiser above mentioned while the four wheels illustrated in a stern view of the 38-foot quadruple screw Sea Sled shown in the April issue of MoToR Boating were also of Hyde manufacture.

Delco Announces New Product

The Dayton Laboratories Engineering Co., of Dayton, O., better known as the Delco, has recently put on the market an outfit composed of a gasoline engine and electric plant for yacht lighting. Owing to the fact that this concern's present business of starting, lighting and ignition equipments for automobile is so very large, it has been decided to establish a separate organization for handling the new product. The new company is known as the Domestic Engineer-

and Repair. She is the first scout boat actually to carry a three-pounder and a one-pounder as a part of her regular equipment. A very efficient wireless outfit is installed and ample quarters are provided. The officers' quarters are forward and include shower bath, large toilet and two statercoms. Then comes the engine-room, which is large, roomy and splendidly ventilated; suitable provision has been made for the installation of the auxiliary machinery, wireless outfit, etc. Back of this again comes the wardroom, very comfortably fitted up and strictly business-like with a large and well arranged galley adjoining. Comfortable quarters for the crew are located in the stern. No attempt has been made to make the boat fussy, as it is a scout boat first, last and all the time.

Ferro Inspection Ferro inspection

Each outboard motor manufactured by the Ferro
Machine & Foundry Co., of Cleveland, O., is subjected to most exacting tests before it leaves the
factory. After being run in on a special machine
for several hours, it is installed on a rack in a large
water tank and is given a thorough test under its
own power, not being passed by the inspector until
it comes up to the standard in every way. A battery
of these efficient outboard motors is shown in the
accompanying illustration.

V Runabouts

An illustration on this page shows one of the Gene V runabout hulls posing for its photograph in the street in front of the plant of its builder, the Motor Boat and Auto Supply Co., of Cincinnati, O. The boat was snapped just in advance of being hauled to the station for shipment to Chicago on an order from George B. Carpenter & Co., of this type are built of the station for rough water use, having high freeboard forward and raised deck shear. They are built along V-bottom ince with molds and battens.

Gastabs

Gastabs

These are soluble tablets which when dissolved in gasoline are declared to supply elements which greatly increase the power and efficiency of the fuel. Their presence in the gasoline is stated to bring about complete vaporization, breaking up the gasoline into minute globules so that when the mixture reaches the firing chambers it is almost 100 per cent. efficient. Another advantage claimed for Gastabs is that they remove existing carbon and prevent the formation of further deposits. They are used in the proportion of one tablet to each gallon of gasoline, and are sold at 50 cents for 50 tablets, \$1 for 110, and \$3.75 for 500. The Fort Hill Laboratory of Boston, Mass., is the maker.

New Sterling Distributors

New Sterling In The Sterling Engine Co., of Buffalo, N. Y., has recently made arrangements with the following well-known concerns for the handling of its product in the locality represented by each: Hyman Supply Co., Newbern and Wilmington, N. C.; J. H. Hallman, I ale of Hope, Ga.; Creef & Jones, Manteo, N. C.; William Curry's Sons Co., Key West, Fla.; L. E. Knowles, Fan a ma City, Fla.; W. F. Farley, Apalachicola, Fla.; Robert Yandt, Coeur d'Alene, Ia.; E. H. Weber, Ranier, Minn.; Atlas Gas Engine Agency (now under management of L. T. Morgan), Astoria, Ore.

Important Communica tion



The testing tank for outboard motors manufactured by the Ferre Machine & Fdry. Co., with a battery of Ferre machines undergoing a thorough test under their own

of Day-

One of the popular Gene V sea runabouts built by the Meter Boat & Auto Supply Co.. of Cincinnati, O., and boxed for shipment to Geo. B. Carpenter & Co., of Chicago, Ill.

ing Co., and has its headquarters at present in the Delco plant, while an extensive new factory is being built. The company was recently incorporated for \$800,000, and its officers are E. A. Deeds, president; C. F. Kettering, vice-president; R. D. Funkhouser, secretary and treasurer, and R. G. Grant, general manager. The Delco Co. is well known in the automobile industry, being one of the leading makers of high grade electric equipment for motor cars. It is declared that last year's output was for more than 125,000 complete systems of starting, lighting and ignition, while the prospects are for enormously increased business next year.

ignition, while the prospects are for enformously increased business next year.

Screw Propeller Designs

The American Screw Propeller Co., of 1520 Sansom St., Philadelphia, Pa., is a comparatively new concern which specializes exclusively in the design of screw propellers for all types of boats from battle-ships to motor craft. The company has for its sole object the one specialty in efficiency of eliminating waste of propulsive power due to inefficient screw propellers. It does not make or sell propellers, although it is in close touch with those who do, but it does make and sell designs and working drawings of propellers which are declared to be of the highest efficiency now practicably obtainable, for any given hull or speed where a fair amount of accurate hull and power data can be provided. The Dyson method of design, data can be provided. The Dyson method of design, developed by Capt. Chas. W. Dyson, U. S. N., which includes exhaustive testing in the Government model tank at Washington, is followed by the American Screw Propeller Co., and the company has the advantage of numbering Capt. Dyson himself among its consulting engineers. One manufacturing concern which has recently announced its doption of the American Company's Dyson models is the American Manganess Bronse Co., of Holmesburg, Pa.

Another New Scout Boat

Another New Scout Boat

Another one of our prominent yachismen has shown his public spirit and patriotism by building an outand-out acout boat, Rear Commodore Harold S. Vanderbilt, of the New York Yacht Club, having placed his order for a 72 x 12-foot 6-inch scout boat from designs by Swasey, Raymond & Page. The boat is now under construction at the yards of Murray & Tregurtha, South Boston. The power plant is to be a pair of the powerful twelve-cylinder Twin Six 450 h.p. 6 x 7-inch Van Blerck motors, the first one of which was exhibited at the New York Motor Boat Show and created such a sensation. This boat is similar in many ways to the 63-footer that is under construction for Hermann Oelrichs, which is also powered with a pair of Twin-Six Van Blercks, nasamuch as every point has been taken care of and carefully worked out to make her of value in an emergency. Mr. Vanderbilt's boat will carry 1,200 gallons of fuel, thus giving a very large cruising radius. It is being built to Government requirements and under direction of the Bureau of Construction

I notice in your issue of June, 1916, on page 38, a statement that I am testing all the Van Blerck high-speed motors. This statement conveys a face impression. I am not testing all this firm's high-speed power plants, but I have tested a large number of these power plants for the purchasers of same during the last ten months.

MORRIS M. WHITAKER, Upper Nyack, N, Y.

Oberdorfer Bronze Bushings and

Bearings

Cognizant of the importance of the finished bronze bushing and bearing business in connection with the marine engine industry, the M. L. Oberdorfer Brass Co., of Syracuse, N. Y., has in recent years specialized in the manufacture of these items on a large scale. The company states that by means of laboracying devices and rapidity and accuracy of operaction, a substantial saving is made for the marine engine manufacturer as compared with his own factory costs. Correct bushings and bearings play no small part in the success or popularity of a motor, and many



an endurance record or non-stop run has been largely accomplished through the presence of high grade bushings in the construction of an engine. Realizing the popular demand for bushings and bearings that would stand up under strain, the Oberdorfer Company has been able to produce finished parts of this nature which are stated to be unexcelled in quality and workmanahip. The metal used in their construction is compact, close-grained and homogeneous, being of the proper mixture to insure longevity. Bushings and bearings manufactured by this concern are always kept within the tolerance permitted regardless of the closeness of the limits involved.

alendar

July 1—Annual Race, New York to Albany and Return
July 1—Rhode Island Y. C. 100-Mile Race
July 4-6—Mississippi Valley Power Boat
Association Regatta
July 8—New York to Cornfield Lightship

and Return.
July 15—New York to Ambrose Channel

Lightship and Return
July 16-21—Put-in Bay Regatta
July 29—New York and New England
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Is Your Boat **Exposed To Dirty Water?**

TERE is something for every boat owner in or near a large city to think about. Waters that are subjected to oil or sewage, play havoc with the finish of a boat. The letter on this page tells of an experience with the polluted waters of the Passaic River.

The owner of the boat shown at the top of the page could not keep his craft looking clean. The acids, oils and general dirt discolored the sides and necessitated constant repainting.



The "Maybel K." Owner Gustave Kreutzer, Jr., Newark, N. J.

But the bright work on his boat and the tender was finished with Valspar, and they resisted the damaging action of the dirty water. The same tough, durable and waterproof qualities that have made Valspar famous, made even this water harmless.

Newark, N. J., January 20th, 1916.

Messrs. Valentine & Co., New York, N. Y.

Some three years ago I purchased the Maybel K. (photo enclosed) and for business reasons was compelled to moor same on the Passaic River, a stream noted the control for its oil, chemical and sewage laden waters. It is so filthy that the gas arising from it discolors the paint on buildings a quarter of a mile away.

Like every other boatman I take great pride in having my boat in the best of shape and I have spent all the time and money I could spare to keep it so. I first used a paint consisting of white lead, turpentine and linseed oil, but after one week in the above mentioned water it changed from white to a greenish black. I then tried a number of highly recommended marine paints and enamels; while they stood up a little better, the chemical action soon changed them to a dirty yellow.

This past spring I decided to paint the boat as near the river color as I could. When I started to get in shape I noticed that the bright work and dink, which were finished with Valspar Varnish the year before, hardly showed the effects of a season's exposure.

That set me thinking if Valspar would protect the plain wood why not try it on the paint, so I finally used zime and turpentine with about 20% of Valspar in the last coat to give it a finish. I received a most agreeable surprise when I fould that the greasy waters had no more effect on my boat than rain on the back of a duck.

With the use of a scrubbing brush once this season I have been able to keep a respectable looking boat without repainting. I now pride myself on having one of the cleanest boats in these waters and I can again hold up my head with the fleet outside.

(Signed) GUSTAVE KREUTZER, Jr. 289 Walnut St., Newark, N. J.



Just think of it! Valspar actually refused to turn white under conditions that made heavy marine paints wilt. Do you wonder we feel that Valspar belongs on every boat that uses varnish?

Read the letter at the bottom of the page. Perhaps right now you are in the same difficulty, and the letter shows you a solution.

VALENTINE & COMPANY 456 Fourth Avenue, New York

Largest Manufacturers of High-Grade Varnishes in the World

Established 1832 VAR NISHES Mark

W. P. Fuller & Co., Agents for Pacific Coast:

Naval Architects and Yacht Brokers.

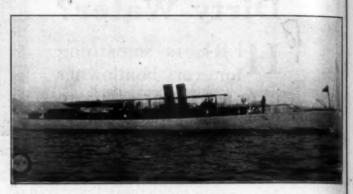
COX & STEVENS

15 William St., New York Telephone—1375 Broad Cable—BROKERAGE

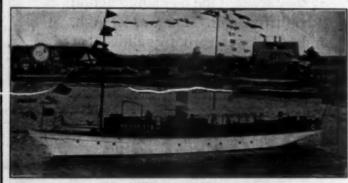
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER A few are shown on this page. Plans, photographs and full particulars furnished on request. Catalogue illustrating types and sizes of yachts we have for sale will be mailed on application.



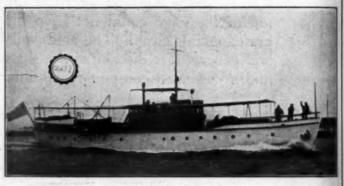
No. 84-For Sale or Charter-Handsome, fast 190 ft. steam yacht. Speed up to 18 knots. Splendid accommodations. For full particulars apply to Cox & Stevens. 15 William St., New York.



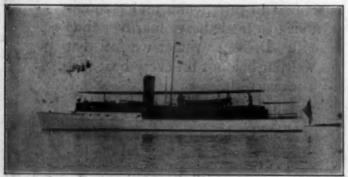
No. 45-For Sale or Charter-Twin screw express steam yacht; 110 ft. long. Speed on to 23 miles. In commission. Remarkable bargain. Cox & Stevens, 15 William Sa., New York.



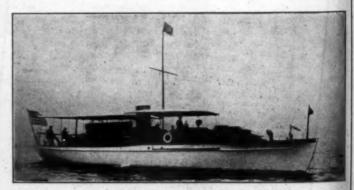
No. 573—For Sale—Twin screw power yacht, 90 x 14.6 x 3.2 ft. Speed 11 miles. Large accommodations include dining and main saloons, three staterooms, bath, two toilets, etc. Very economical to operate. Bargain for early disposal. Cox & Stevens, 15 William St. New York.



No. 2237—For Sale or Charter—Twin screw power yacht; 97 x 16.7 x 3.6 ft. Speed 14 to 16 miles; Standard motors. Dining saloon on deck; four staterooms, bath, two tollets, etc., all conveniences. Cox & Stevens, 15 William St., New York.



No. 392—For Sale—Very able power yacht; 92 x 13 x 4.2 ft. Speed, 13-14 miles. 105 H.P. 6-cylinder 20th Century motor. Electric lights. Accommodations include large main saloon with two transom berths, two double staterooms, bath and two toilets, etc. Interior finish mahogany throughout. Unusually large deck space. In excellent condition throughout. Always had best of care. Equipment complete, including power tender and dingly. Available at attractive figure. Apply to Cox & Stevens. 15 William St. New York.



No. 2428—For Sale or Charter—Attractive gasoline cruiser; 75 x 14 x 4.6 ft. Bull by well known firm 1913. Speed 12 miles. Sterling motor. Dining saloon and galler forward; two double staterooms and bath aft. Cox & Stevens, 15 William St., New York.



No. 3200—For Charter—65 ft. modern gasoline houseboat; speed 10 miles. Main saloon, five staterooms, bath and two tollets, besides saloon on deck. Terms attractive. Cor. 8 Stayssas. 18 William St. New York.



No. 1470—For Sale or Charter—Particularly desirable day cruiser; 67 x 10 x 3.7 ft. Speed up to 16 miles. Stateroom, separate galley, etc. Cockpit 18 ft. long. In commission. Bargain for prompt disposal. Cox & Stevens, 15 William St., New York.



No. 2053—For Sale or Charter—Bridge deck cruise 56 x 11 x 3.6 ft. 35/45 H.P. 20th Century motor. Spot 11 miles. Stateroom, saloon, galley, etc. Price reasons. Cox & Stevens, 15 William St., New York.

STANLEY M. SEAMAN

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YACHT BROKER 220 BROADWAY, N. Y. CABLE, "HUNTSEA," N. Y

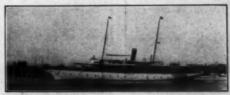
MARINE INSURANCE

Below are some of the finest yachts available for Sale and Charter. We have others of same type and will send full particulars immediately upon request.

We mail free to buyers the only Illustrated Yacht List of its kind published.



5596—125 ft. Twin Screw Steel Steam Cruiser. Speed 21 miles per hour. 3 staterooms and bath. Cost over \$70,000. Low price.



5233—Herreahoff Steam Yacht. 113 o. a., 1814 beam 4 staterooms. 2 baths. Maintained at half the cost of gasolene boat same size. Excellent opportunity to purchase this yacht at low price in order to settle Estate.



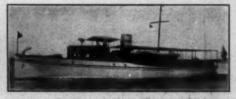
8001—For Charter—Twin Screw 105-foot Gasolene Cruiser. 4 staterooms. 2 baths, Speed 21 miles. In commission. Immediate delivery.



8241-For Charter-83-foot Twin Screw Lawley Cruiser, In commission. Immediate delivery.



8316—For Sale or Charter—Brand new Twin Screw
83-foot gasolene Cruiser. 16½ beam, 3½ draught. 3
Screw Cruiser. In commission. Crew abourd. Immediate delivery.





8181—For Sale or Charter—High grade 75-foot Cruiser. staterooms and bath. In commission. Immediate de-



8318-For Sale-65-foot seagoing Cruiser. 2 staterooms and bath. Practically new.



8063-The only 60-foot Cruiser of type for sale. 3 staterooms and bath. Practically new.



7913-56-foot Express Cruiser. Speed 20 miles. In



8133-The finest 55-foot Coast Cruiser for sale, Perfect condition. Low price.



8320-57-foot Coast Cruiser. In commission. Low





8304—Brand new 53-foot Twin Screw Cruiser. 14.
of beam. 3 feet draught. Sterling engines. In comlision.

8339—For Sale or Charter—52-foot Coast Cruiser.
Double stateroom and saloon. Bath. Speed 12 miles.
In commission.



8296—Immediate Sale desired of this new 42-foot Cruiser, Stateroom and saloon. Two toilets. Electric self-starter at steering wheel. Speed 12 miles. In com-mission. Low price



8206-40 foot Express Cruiser. New 1915. Speed, 25 miles per hour. Wonderful sea boat.



8337—35-foot Gentleman's Express Cruiser. New 1914.
65-90 Van Blerck; speed 15 miles. Cost over \$4,000, In h.p. 4-cycle motor. Electric lights. In commission



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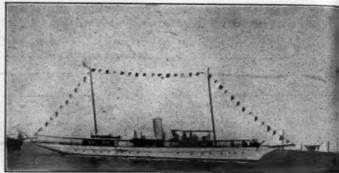
52 Broadway, New York

Telephone, 4673 Broad.

Cable Address: Crogie, New York
A. B. C. Code

We can offer any yacht available for purchase or charter





No. 3872—For Sale—High class 130-foot flush deck Lawley steam yacht. One of the finest boats of size and style available. First class condition throughout. Excellent accommodations. Will be delivered in commission.

No. 1750—For Sale—Finest 160-foot twin screw steel steam yacht available. Speed up to 17 knots. 5 staterooms. 2 bathrooms. Deck dining saloon and social hall. A-1 condition throughout. To be delivered in commission.



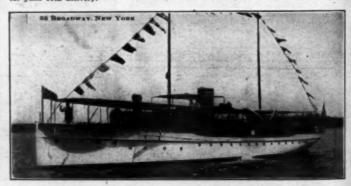
No. 434—For Sale or Charter—Auxiliary steam schooner 162 feet x 120 feet x 28 feet x 16 feet draft. Unusually fine seaboat. Excellent accommodations. Has every convenience for offsbore cruising.



No. 1038—For Sale or Charter for entire season—95-foot auxiliary keel schooner. New 6-cylinder motor. New electric lighting plant. New Ratsey sails. Newly furnished. New plumbing. One of the best boats of size and style available. Ready for June 15th delivery.



No. 5213—For Sale or Charter—New bridge deck cruiser. Built by Lawley. Delivered July 1915. 80 ft. x 16 ft. x 5 ft. 6 in, draft. 6-cylinder 125 H.P. Winton motor. Hot water heating plant. Electric lights. Best boat of size, style and accommodations available.



No. 4717—For Sale—High-class 98-foot twin screw modern motor yacht, 17 ft. 2 in. beam, 5 ft. 6 in. draft. Fine accommodations Well arranged. A-1 condition. Speed up to 16 miles. Fine seaboat. Must be seen to be appreciated. Reasonable.



No. 3747—For Sale—High class 61-foot cruising motor best. Construction, finish and equipment A-1 throughout. Must be seen to be appreciated.



No. 2646—For Sale—High-class auxiliary aloop, 43 tt. 6 in, x 30 ft. x 10 ft. 3 in; x 6 ft. 3 in. draft. One of the popular New York Yacht Club Thirty-Foot, one design class. Motor installed 1915. New Ratsey sails 1914. Complete cruising equipment. Everything in connection with the yacht and outfit in excellent condition.

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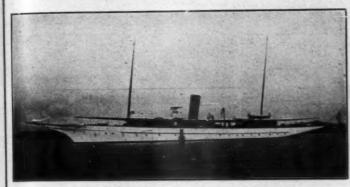
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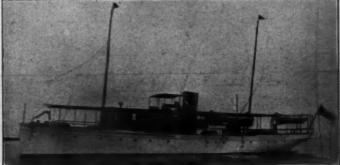
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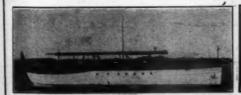


No. 181—Steel Steam Yacht, twin screw, 155 x 18, Seabury built; good accommotions, speed 16/18 miles. In commission.











No. 1893—Summer Charter—Twin screw power yacht, No. 920—Trunk Cabin cruiser, 65 x 12.6, six-cylinder No. 951—Twin Screw Power Yacht, 70 x 13, two Twentieth Century motors, excellent according to the control of the co







No. 1711—Twin Screw Power Yacht, 61 x 13, good No. 2059.—Comfortable cruiser, 51 x 10.2, built 1913; No. 1423.—Raised deck cruiser, 55 x 12. Standard motor, with deck control.









No. 1424—Bridge deck cruiser, Lawley built; 52 x 8.6; No. 1000-B—Mahogany launch, 39.11 x 6, excellent consix-cylinder motor, speed 14 miles. Engine controls on dition, 150 H.P. motor; speed, 30-33 miles.

No. 1256—Attractive Trunk Cabin cruiser, 45 x 9.6, excellent consideration of the constant of th

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Surveying

Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you, write us your requirements. Our knowledge of the yachts we offer, and our 22 years' experience in the business, insure satisfaction to any one buying or chartering a yacht through this offer.



No. 733-94-foot twin screw passenger boat. Two 50 H.P. Murray and Tregurtha motors. Speed 10-12 miles. Price attractive.



No. 1624—38-foot cruiser; 9-foot beam, 3-foot draught, 25/35 H.P. Sterling installed last year. Speed 10-11 miles. Well built, everything in good condition. Splenditos aboat. Has run the coast from Cape May and Barnegal to New York frequently. Owner anxious to sell. Bargain for someone.



No. 1726—Sale or Charter—86-foot power yacht. Three staterooms, main saloon, dining saloon, bath, etc. 100 H.P. Craig Moter. Refurnished this season.



No. 3594—110-foot twin screw express steam yach Two staterooms, saloons, bath, etc. Speed up to 23 miles Price attractive.



No. 1589-80-foot power yacht. Two staterooms, saloon, bath, etc. 125 H.P. Winton motor. Speed 12 knots.



No. 1761—Twin screw 75-foot power yacht. Stater large main saloon, etc. Speed up to 19 miles.



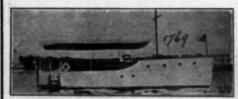
No. 1756-65-foot power cruiser. Two staterooms, ma saloon, bath, etc. Speed 11 miles.



No. 891-75-foot fast power yacht. Stateroom, saloon, bath, etc. 100 H.P. Standard motor. Speed up to 16 miles. Bargain.



No. 1767—38-foot semi-houseboat and cruiser. State room and cabin sleep four people. Speed 8 miles.



No. 1769-36-foot cruiser. Four berths in forward cabin, four berths in after cabin, toilet, etc. Speed 11 miles.



No. 3665—68-foot twin screw power houseboat. Three staterooms, dining saloon, deck saloon and main saloon; bath, etc. Speed 8½ miles.





No. 1291-60-foot fast cruiser. Stateroom, saloon, etc. 100 H.P. Sterling motor. Speed up to 15 miles.





No. 2862—Steam auxiliary, steel, 170 feet. Splendid commodation. Ideal vessel for extensive cruising.

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No. 4121-36-foot auxiliary ketch. Draught 334 feet. Two staterooms, saloon. 30 H.P. engine installed 1915. New cross-cut sails. Splendid proposition.



No. 1269—For charter—105-foot power yacht. Three staterooms, saloon, bath, etc. Speed up to 20 miles.



No. 4171-87-foot auxiliary keel schooner. Two statt rooms, saloon, etc. Speed under power 8 miles.

16

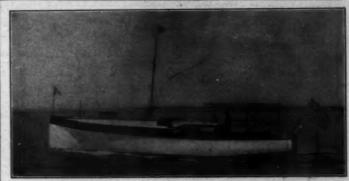
THE MOTOR BOATING MARKET PLACE

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



ters, one man control, ompt delivery. Dimen Co., Stamford, Conn.





2 x 12 x 3' 9" Yacht, complete equipment. Speed, 9 miles, Heavy Duty Engine, in good condition and in commission. Built 1999. Will take \$1,390.00 cash if taken at once. There is nothing wrong with this boat; it is a real bargain, and if you are interested in a yacht, this is the one. P. M. Child, 1110 14th St., N. W., Washington, D. C.

FOR SALE—Raised deck cruiser, two years old, 43 ft. x 9 ft. 8 in., 4-cylinder, 4-cycle Palmer engine. Speed 10 miles. One-man control, three cabins finished in manuauy, electric lights, toilet, icebox, 50-gal, fresh water tank, 80-gal, copper gasolene tank. Complete cruising equipment. Address, Edwin N. Black, 606 Park St., Bridgeport, Conn.

\$11 h.p., 2-cylinder Fox—\$65.00. 40 h.p., 4-cylinder National with magneto—\$80.00. Others cheap. Elmer Calkins, Petosky, Mich.

A 22 H.P. MEITZ & WEISS kerosene marine oil cagine with reverse, heavy duty, 3-cylinder, complete. Sacrifice, Power, Room 402 Bristol Bldg., New York City.

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Used Boats and Engines, most every size and type. They are selling fast; send for list.

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FOR SALE—Do you want a six-cylinder motor for your heat or automobile? We have three new ones. Cost \$11500 each, will sell yery reasonable. Gilbert, 175 Wooster St., New York City.

CANADIANS, Second-hand engine bargains. Send for list.
GUARANTEE MOTOR COMPANY
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Motor Boating's Market Place columns offer the buyer and seller of used motor boats, fittings, etc., a quick and convenient medium of

If you are getting a new boat or a new engine, and wish to sell the old one, don't have it rotting, or rusting, or collecting storage charges-sell it-in the Market Place.

Perhaps you have waterfront property suitable for a yacht club, or for individual yachting enthusiasts—the Market Place goes to over 25,000 individuals interested in all things pertaining to the water.

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MoToR BoatinG

119 WEST 40th STREET

NEW YORK CITY

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 3 cents per word, minimum 75 cents. If an illustration is used, the charge is as follows, which includes the making of the cut: Cut one inch deep, one column wide. \$2 Cut 3½ inches deep, 1½ columns wide. \$5 Cut three inches deep, three columns wide. \$15

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



FOR SALE—This beautiful 30 x 6 Crouch design, V-bottom, solid mahogany runabout equipped with a 135 H.P. R1-Sterling motor with Bosch Rushmore starting and lighting outh.

This complete outhit is brand new having never been used excepting on one trial trip. On this trial she showed a speed of 36-61/100 miles over the one mile measured course on the Hudson River.

We feel confident that this boat is the fastest outfit of its power ever produced and after certain adjustments are made, she will show a speed of between 38-39 miles per hour.

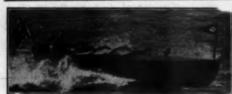
The boat is fully equipped in every respect and can be seen at the Gas Engine & Power Company and Chas. L. Seabury's place, Morris Heights, N. Y.

This outfit will only interest a man looking for an exceptionally high class boat of plano finish and the best that can be built. Will accommodate eight people.

Particulars—Bruns Kimball & Ca., 115 Liberty Street, New York. Phone



-High speed runabout, designed by R. M. Haddock, New Rochelle, N. Y. For Sale—High speed runabout, designed by R. M. Haddock, New Rochelle, N. Y. 36 ft. long, 5 ft. 6 in. beam. Cypress hull, mahogany decks. Equipped with 6-cpl, 60-99 H.P. Van Blerck motor. Fully equipped with auto top, electric starter, electric lights and all other necessary fittings. This boat is in absolutely first-class condition. Cas be inspected at the Boat House of E. Housey, ft. of Bathurst St., Toronto, Canada Boat is for immediate use. Price \$1800. Any other information can be obtained from the owner, Otto Higel, 336 E. 4th St., Mt. Vernon, N. Y.



\$47.50 for a limited time, we will sell these seventeenot stepless hydroplanes at the above price for complete
sock-down boat, which includes mahogany interior and
erry piece of material necessary to complete the hullther models at proportionate prices. Write for circulars.
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Point Pleasant, Kentucky.

BARGAIN—3-Cyl. Smalley Aluminum Steel Engine, b-24 H.P. Complete Equipment, Reverse Gear, Stuffing ox, Strut, Bronne Shaft, and new propeller. Used one ason. Cost over \$900.00. First check for \$425.00 takes er. Davis & Child, 1110 14th St., N. W., Washington,

WANTED—To buy a 32 to 38-foot cruiser. Must have speedy lines and be in absolutely first class condition. Either with or without engine. Send plans and specifications with first letter. If your boat isn't a bargain don't write. E. J. Hisey, 575 King St., Charleston, S. C.

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SNAP!-Scylinder, V-type engine, like new. Bargain-icordo, care of MoToR BoatinG.

New two horsepower, two-cycle, Waterman inboard motor complete with shaft and propeller. Never been used. Sell cheap. D. M. Myers, 110 W. 49th St., New York City.

THE ONTARIO, for exchange or sale. 32 ft. x 7½ ft. x 3½ ft. New Twin engines, 4-cyle, 4-cylinder, 10 to 15 horsepower each. Four sleeping berths in cabin aft, two forward, all out of the way in day time. Toilet. Cooking arrangements, icebox, and dining saloon forward of the pilot house; all lighted and ventilated by port holes; good enough for a man of war. The cabin aft and the pilot house are enclosed with heavy beveled plate glass mirror built in. Electric lighted throughout, including running lights. Engines were installed last winter and worked satisfactorily to Miami, Florida and return. She proved herself a good sea baat, outside and in. Copper and brass furnishings and fastenings, cypress planking. Want to exchange for a larger boat, auxiliary preferred. The Ontario is hauled out at Morehead City, N. C., where she will be shown at any time. Correspondence solicited. Will look at your boat and give a great bargain if there is a chance to get what I want. P. P. Johnston, Lexington, Ky.



No. 3202—For Sale Cheap—Trunk cabin cruiser in prime condition; 40 ft. x 9 ft. x 3.6 ft. Heavy construction, copper fastened. Heavy duty 40 H.P. motor; speed 9 knots. One man control. Complete inventory. Good accommodations. Further particulars from Cox & Stevens, 15 William Street, New York.

FOR SALE—Thirty-eight-foot trunk cabin day cruiser with bunks, toilet, galley, refrigerator, electric lights, and complete equipment. Just overhauled, now in commission. Bargain. Box 26, 27 West 44th St., New York City.



No. 3212—For Sale—Seabury mahogany launch, 30 x 6 x 2 ft. Four cylinder 4½" x 5" four cycle motor. Good equipment. Cox & Stevens, 15 William St., New York

U SE "SNAPPER" ENGINES for your small best They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

FOR SALE AND TO LET-Motor and sail boats su able for the Great South Bay. Telephone Connectis Frank Weeks, Patchogue, L. I.

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Give the secretary of your club a dollar for a year's subscription for MoToR BoatinG, and ask several other members to do the same. The secretary will forward the subscriptions to us and we shall give the club, free of charge, a flag guaranteed to be U. S. Govt. standard all-wool bunting—the size of the flag depending upon the number of subscriptions, according to the following schedule:

4 ft. x 6 ft., worth \$6, for 15 Subscriptions 6 ft. x 9 ft., worth 9, for 20 Subscriptions 8 ft. x 12 ft., worth 11, for 25 Subscriptions 10 ft. x 15 ft., worth 13, for 30 Subscriptions 12 ft. x 18 ft., worth 16, for 40 Subscriptions

You thus kill two birds with one stone. You get the finest magazine of its kind for a whole year and, with your fellow-members, you save your club real money.

Simply hand your dollar to your Secretary, or whomsoever the club may designate to collect it, tell him what it's for, and he will do the rest. A two years' subscription (\$2) will count as two sub-

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MoToR BoatinG 119 W. 40th Street, New York City

Where Shall We Cruise This Summer?

(Continued from page 9)

only by a stretch of narrow beach, a run of several miles around the Neck must be made to reach it. Huntington Bay, of which it is a part, has been a scene in times past of many important motor boat races, and is the largest protected barbor on the Long Island side of the Sound. Contributory to its importance are Huntington Harbor, which must be entered with caution by the stranger, and Northport to the eastward. Northport Harbor has long been the favored spot of New York metror boatmen, for it is a convenient run from the city, and the harbor itself is the finest on the Sound. It is of good depth and exceedingly well protected from all winds.

Huntington and Northport are typical of the villatington and Northport are typical of the villating of the morth shore of the inland, and with their stone the most attractive towns of the villating of the provided the villating the provided the villating the

found most satisfactory for boats of any ordinary draft.

One would naturally not care to stop for the night at each of these many towns on the Connecticut shore, nor is it likely that it would be necessary to put into one after another of them because of threatening weather. It is well to know them, however, for one will be richer by their acquaintance both in practical knowledge and in reminiscence. Particularly attractive for cruising and exploring are the Norwalk Islands, of which there are a dozen or more at the mouth of the Norwalk River.

It would be impossible to say which of the many towns along the western edge of Connecticut is the most attractive, as individual tastes differ to such an extent. There is hardly one of them that doesn't boast its well-known yacht club, while supplies of every kind may be obtained at nearly all of them. Among the most prominent of the yacht clubs are the Stamford Y. C. on the west side of Shippan Point and the Indian Harbor Y. C., at Greenwich. Greenwich is the last port in Connecticut and as one enters the waters of New York State an equally good harbor may be found just over the line in Port Chester. At Rye one comes to one of the termini of the Sea Cliff ferry, and Oakland Beach near its a summer amusement resort of the Coney Island order.

Of the yachting communities at the western end

is a summer amusement resort of the Coney Island order.

Of the yachting communities at the western end of the Sound, Mamaroneck and New Rochelle contribute their full quota to the boating activity. The beautiful new clubhouse at Shore Acres, Mamaroneck, is a good recent example of modern club architecture, while the New Rochelle Y. C. and the Huguenots at New Rochelle, and the New York A. C. at Travers Island have reason to be proud of their homes. The crack fleet of the Larchmont Y. C. in the harbor of that name is an important adjunct in the yachting life on the Sound, for in it may be found some of the largest boats of New York waters. There is a choice of anchorages at New Rochelle, old New Rochelle (Centinued on page 50)

Palmer Marine Engines

35 MODELS—2 TO SO H.P.
Two-Cycle and Four-Cycle Types,
Palmer Launches and Cruisers—16 to 42 ft. in length.
Write today for catalog.
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When you think of buying a boans—never require calking. Doal, whether it be a 16-foot it bear to see that the boat or something in between the largest bear factor; in the

NORTHWESTERN MOTORS

18 H. P. Electrical Equipment \$250

Row Boat Motor, \$50. 10 H.P., \$150. 2 H.P., \$50. 4 H.P., \$75. 7 H.P., \$100.

Sold on 30 Days' Pree Trial. Write for Catalog.

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A VOIL demente by using a DIRIGO compass on that class. No rubber gaskets to ret A very hard pivot and high-gradited. Navy degree circle as dial. Brass and makegany bin nacles. Also new course finder and bearings instrument. Seef of descriptive cutalag. EUGENE M. SHERMAN Bex 3

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Fenders for Docks or Boats

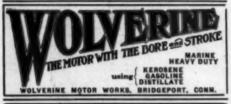
To clean up our stock of Hose Fabric we will furnish some odd lengths at the sacrifice price of 15 cents per foot. The lengths vary from 50 to 5 feet and are all 2½ inches in diameter and are well adapted for bumpers and fenders.

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STONE MANUFACTURING CO.
New York City

Where Shall We Cruise This Summer?

(Continued from page 49)

Harbor being as protected as a fresh water pond when once its difficult entrance has been threaded, and Echo Bay being easy of access but not fully sheltered from southerly and easterly winds.

It is impossible in an article of this length to tabulate the myriad points of interest along the shores of Long Island Sound, but I feel that enough has been indicated to convince the visiting yachtsman that he will not throw away time spent in an extensive cruise in these attractive waters.

Running in the Fog Made Safe

in these attractive waters.

Running in the Fog Made Safe

(Continued from page 12)

storm or in a heavy fog. The apparatus on the ends of the breakwaters or at the danger points upon the shores could, by a simple turning of a button at the side of the telephone, have their ranges set so that they would reach out simply to the outer edges of the main channel. The instruments upon the incoming and outgoing boats would catch no sound from these devices upon the shore so long as the boats carrying them remained in the channel, but the moment the vessels left the proper course the instruments upon them would catch the warning from the shore devices. Different dashes and tones would tell the officers on the boats from which direction the warning waves were coming.

But there are other features which make this new system more remarkable. One of these is that it may be used as a sea telephone as well as a fog signal, so that the moment the officer on the bridge catches the tone from another instrument he may, by the turning of a small button, convert his instrument into a telephone and may immediately start a conversation with the officer on the approaching ship. In fair weather this instrument may be used as a telephone between ships that are passing each other or that are working or traveling together.

Probably the most striking point about this new system is that its waves are immune against intercourse from apparatus in existing stations. By this is meant that these waves are not affected by and neither do they affect the currents sent out by instrument now in use. This would be a valuable feature in the event of war, or, in fact, at any other time, for if the boats of a nation were equipped with this low-frequency system the officers on those boats could converse together without any danger of their messages, or even the fact that a wireless conversation was in progress, being detected. Then, should those officers wish to employ a system used in existing stations hey would have simply to press a button on the si

Bringing Out New Models

continued from page 15)
others from the statements of cost from other companies are probably accurate.
A small single-cylinder engine, designed about four years ago, affords an example of the cost of designing a very simple machine. The designs and drawings and the building and testing of the experimental engines cost \$836.23; the engine patterns, both preliminary and permanent, cost \$3,410.31; and the cost of the jigs and fixtures including the drawings and patterns for same amounted to \$2,432.70, or a total of \$6,669.24 to bring this engine to the manufacturing point.

An engine of this general type cost is instituted.

of the jigs and fixtures including the drawings and patterns for same amounted to \$2,422.70, or a total of \$6,669.24 to bring this engine to the manufacturing point.

An engine of this general type can be jobbed somewhere in the neighborhood of \$30, and it costs nearly \$7,000 to develop it to where it can be manufactured and sold at \$30. Now in distributing the developmental cost over the production, if only \$1 per engine were added to absorb this cost, it would not absorb this cost until 6,669 engines had been built and sold.

One small four-cylinder four-cycle engine, 2\$4-inch bore and 4-inch stroke, cost \$1,200 for the drawing. This, of course, included the salary of the chief designer while on this particular job. The tools and jigs, which were in most cases simply temporary and were not built for quantity production, cost about \$1,100; the dies for crank- and camshafts, connecting rods, gaskets and bushings cost just under \$1,000; the patterns, some of which were well made and permanent and others simply temporary patterns, cost about \$600—and all of these figures carried but slight overhead expense.

The cost of development of another four-cycle type, designed to be built in two, four and six cylinders, amounted to more than \$22,000. The designs and drawings on experimental engines cost nearly \$6,500; the patterns, including the temporary and permanent patterns for engine manufacture, amounted to about \$4,100; and the jigs and fixtures, including drawings and patterns for them, ran about \$11,600. In this design a great many of the parts were interchangeable on the two-, four and six-cylinder models, these including the connecting rods, pistons, rings, bearings, camshaft drive, cylinders, etc. This, of course, tended to reduce the developmental cost very materially.

Is it any wonder that the manufacturer hexistes in deciding to bring out a new model? He has the original investment amounting to several thousand dollars, and he must begin, at the end of three years. If this course is followed, it means that



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Expert Dory Seamanship

Expert Dory Seamanship

(Continued from page 22)

sary and splice it with a piece of tubing), and then fix up an oar lock on the transom. You will often find this a great help in handling the boat.

If you find that you are drifting ashore, and the surf is dangerous, be careful when you get in the breaker to keep her head on. Don't take in your drag. Try to keep the boat from being carried ahead by the breaker when it first strikes you, waiting until thas passed, then riding on its back. If you are carried ahead of it you are almost certain to be twisted sideways and rolled over, because the stern (when you are going in stern first) will be pressed down by the bow rising up, and the latter will then be twisted around.

A good way to go in if you have lots of line is to drop your anchor, and hold on when the breaker strikes, paying out as soon as it has passed, being ready to hold her again when the next breaker comes. Keep the bow down and the stern up as much as possible. Don't be afraid of carrying too much anchor, and 300 feet of line on my 20-footer. The 40-pound anchor is stowed under the floor and never brought out except in bad cases, but I have felt much better many times in the knowledge that it was there. If your engine breaks down and there is a strong offshore breeze you want your anchor to hold.

A sail for a small boat is very much in the way, and of little use, except possibly with a break-down and a fair breeze of moderate strength which will bring you in at about the same speed that you could scull in. For myself I would rather depend on my engine and take every precaution I could to safeguard against break-down.

JOSEPH APPLETON, POT Washington, Wis.

Among the Clubs

Among the Clubs

(Consissed from page 34)

this section of the city, were probably entitled to some consideration and that Commissioner Park's plan was woefully inadequate, but the commissioner evidently did not think so.

It is unbelievable that in connection with this great contemplated improvement the Park Commissioner and the Borough President have both gone out of their way to wipe out a sport which has grown steadily during the last twenty years, and in which 60,000 citizens are actively interested—with an investment of almost \$6,000,000 in boats and clubbouses. Commissioner Ward stated that he was quite familiar with the boating interests of New York City, while the representative from the Borough President's office said that he lived up on Washington Heights. As a matter of fact neither one of them has called at the clubs affected to find out about the extent of the interests involved, and the embarrassment and loss that would follow if they continue to block the plan of the Commissioner of Docks to take care of boat clubs. And as already stated the civic association themselves, ostensibly representing the interests of the citizens, have not taken the trouble to look the matter. The city has provided adequately for the needs of the golfer, the baseball player, the tennis player, and for almost every other sport, and it should be broad enough to see that the grownnor that the thinking considerate officials of the city will permit the motor boat sport to be wiped off the Hudson River.

Kerosene Motors (Continued from page 11)

Clifton

One of the illustrations on page 11 shows the 90 h.p. Clifton kerosene-burning heavy-duty engine manufactured by the Clifton Motor Wks., of Cincinnati, O., which is stated to operate quite successfully. The apparatus used consists of two separate carbureters which require no attention after the initial adjustment, and which are connected together through a three-way cock. A special heating arrangement has made it possible for the Clifton engine to operate successfully on kerosene, and this device consists of a passageway, equal in distance to all of the cylinders, heated by exhaust gases, and with no pockets where the fuel can condense and accumulate. The vaporized fuel is carried into the cylinders as quickly as possible after leaving the carbureter, and is kept hot enough to prevent condensation. The exhaust manifold is partly water-jacketed, and the inlet manifold is cast integrally with it. The performance of the Clifton engine is stated to be so satisfactory on kerosene that very little water is required with the fuel. However, an auxiliary water jet is provided so that fresh water may be injected if required. These kerosene-burning attachments are being put out in all sizes, and old engines may be converted to kerosene by obtaining the necessary fittings.

Fay & Bowen

While not laying special stress on the kerosene proposition, the Fay & Bowen Engine Co., of Geneva, N. Y., has for several years put out a double-cylinder two-cycle engine of the gasoline-kerosene type. Although differing little in outward appearance and general design from this company's standard two-cycle engine, it is not a standard type with a kerosene attachment, the interior design and construction being radically different. Kerosene is applied through special needle valves just above the exhaust pipe and is carried under a slight pressure obtained by means of a compressor attached to and operated by the engine. By this method it is stated that the kerosene is thoroughly vaporized, thus largely eliminating the exhaust door; the consumption of fuel per developed horsepower is almost identical with that of gasoline, the cost of operation, therefore, being figured exclusively on the difference in cost between the two fuels. Starting is effected in one of three ways—by removing the hex plugs from the exhaust pipe and applying a torch for two or three minutes, by priming several times with gasoline or by connecting a small supply of this fuel to the generating valves. Fay & Bowen

Ferro

One of the accompanying illustrations shows a two-cycle motor manufactured by the Ferro Machine & Foundry Co., of Cleveland, O., fitted with a special Ferro atomizer. The Ferro line offers a choice of eleven engines in one, two and three cylinders from 3 to 25 h.p. The Ferro is declared to be a quick-exploding, clean-burning kerosene engine and its suc-(Continued on page 54)

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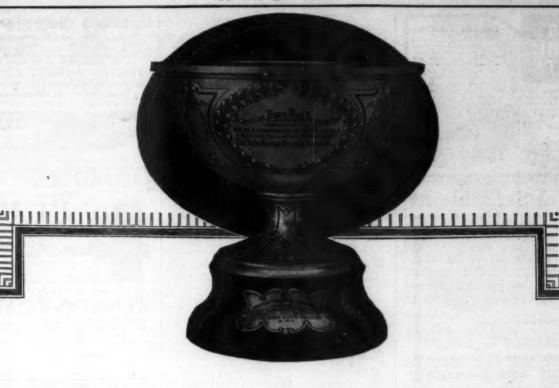
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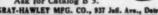


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Kerosene Motors

Centinued from page 52)

cess to be due to the perfect vaporization of the kerosene before it reaches the combustion chamber. The kerosene is sprayed by the atomizer against the heated deflector of the piston head, and it responds immediately to the spark and burns clean, leaving little carbon. A special feature is the water jacket which regulates the temperature of fuel in the atomizer, making certain a steady flow even at the varying temperatures of the engine. A single adjustment establishes a proportion of air and fuel for all speeds, and control of the fuel supply by the volume and pressure of the air charge in the crankcase. (governed by the throttle) assures proper mixture under all conditions. Starting is accomplished by means of a cup which holds enough gasoline to warm up the engine, and makes unnecessary any priming with a squirt can.

Frisbie

Frisbie

Off and on for the last six years the Frisbie Motor Co., of Middletown, Conn., has experimented with kerosene as a fuel, and for the last year it has been going at the proposition in a matter of fact way with the result that this company's double fuel system, as it is called, is much more satisfactory than had been foreseen. In this system it is possible to shift from gasoline to kerosene or vice versa immediately, while it is also possible to set the apparatus so that the motor is fed from the gasoline and kerosene carbureters at the same time, developing more power than when either fuel is used separately. While running on kerosene, the throttle valve from the gasoline carbureter allows enough air to pass in to act as an auxiliary air valve, and it is said that the power shown under test is practically the same on kerosene as when the regular gasoline cutfit is used. It was also found that when the gasoline carbureter was opened wide at the throttle about twelve per cent. more power was obtained in running on kerosene. An automatic water check valve has been arranged between the converter and the intake passage which anticome the converter and the intake passage which damits a certain amount of water at such times as the motor is running on continuous full load. It has been found, however, that the water was not essential to satisfactory operation of either single- or multicylinder motors. In all the Frisbie kerosene-burning outfits, a mechanical oiling system is used to obviate the necessity for a splash system and its attendant re-use of the lubricant.

The Gray Motor Co., of Detroit, Mich., informs that although its kerosene motors are not extensively known in the United States, they are widely used in foreign countries where they have been giving the utmost satisfaction. In the Model T kerosene engine the Gray people employ different principles from those ordinarily found in the conventional gasoline engine adapted for kerosene use, no preheating device being used. The motor is fitted with a separate kerosene mixer for each cylinder, and the arbureter is designed with two bowls having separate needle valves. One of these is piped to the arbureter is designed with two bowls having separate needle valves. One of these is piped to the gasoline and the other to the kerosene, gasoline being required for starting purposes. The operation of the two-cycle kerosene motor is radically different from that of conventional two-cycles in which a charge of gas is drawn into the crankcase. In this model no gas whatever is taken into the crankcase, fresh air only being utilized, and this is drawn into the base through the suction of the piston on its upward travel. The descending piston closes the intake port, compresses the air in the crankcase, and forces it at a rapid rate past the carbureter spraying valve in the bypass of the motor. The air suctions lifts a spray of kerosene in proper proportions to create a combustible mixture, which is carried into the cylinder, compressed on the upward stroke of the piston, fired and exhausted as in the conventional type of gasoline motor. The speed control is obtained by required for the inlet coupled with the timing of the motor.

Hartford

The Gray & Prior Machine Co., of Hartford, Conn., has recently perfected a kerosene attachment for use on its 5, 10 and 12 h.p. single-cylinder Hartford motors. Only three extra parts are needed and these may be applied to any of the motors mentioned whether old or new. One of the parts is a vaporizer which is connected to a small gasoline tank of five gallons' capacity; the second part is a fitting for connecting he vaporizer to the motor, and the third is a water sight feed with needle valve control. The vaporizer is used for starting or for very short runs. The sight feed is connected to the carbureter, in which it is first necessary to drill and tap a ½-inch pipe sightle feed is connected to the carbureter the upper end of the sight feed is connected to a tank of clean fresh water which feeds by gravity. If the simple operating directions furnished by the company are properly followed, it is declared that no difficulty will be encountered in the use of kerosene as a fuel.

Kahlenberg

One of the features of the kerosene as a fuel.

One of the features of the kerosene-burning engines manufactured by the Kahlenberg Broa. Co., of Two Rivers, Wis., is the use of fuel injectors instead of carbureters. These are original with the Kahlenberg company, and when one of its engines is equipped with them, it can be operated on kerosene, distillate, gas oil and the lighter grades of fuel oil. This system is entirely independent of the gasoline carbureters and gives two distinct ways of operating the engine, i. e., either on gasoline through the carbureters or on the heavier fuels through the injectors. When using the latter the carbureters are used merely as air valves. The use of these oil injectors does not in any way destroy the reliability of the Kahlenberg gasoline engine, since as the equipments are independent either grade of fuel can be used by the mere opening and closing of a valve.

Mianus

Mianus

Mianus

The kerosene-burning motors, built by the Mianus Motor Works, of Stamford, Conn., are not dependent upon heat for the vaporization of the fuel, the pure compressed air in the crankesse being forced through the heavy partially mixed oil vapor in the bypass and transfer port. It is to this double mixing of the fuel that the success of the Mianus kerosene motors is due, and the gasification is said to be so complete that the ordinary make and break electrical equipment fires the charge as readily as it does gasoline. No carbureter is necessary with these motors, the fuel being taken in directly from the inspirator which also controls the supply. The inspirator is an extremely simple device with but few parts, and, being on the outside of the motor, is readily accessible. (Continued on page 76)

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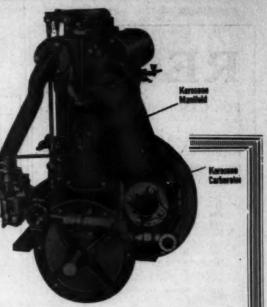
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We have been studying and experimenting with kerosene devices for the past six years. Long ago we developed an engine that gave satisfactory results and power on kerosene. But the type we now announce has been further perfected and refined until we consider it beyond improvement. A Frisbie Motor, operating on kerosene, has been turning the machinery in our factory for several years.



End View of Frisbie Kerosene Mot gear), showing the (without reverse

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Perhaps the most striking feature about the Frisbie Kero-sene Motor is the use of two entirely separate and independent fuel manifolds-one for gasoline and one for Kerosene. Of course, there are two separate carburetors also, and the kerosene manifold is heated to properly gasify the kerosene.

So far as we know this is the only gasoline-kerosene motor having entirely separate manifolds. A manifold hot enough for kerosene causes a marked loss of power with gasoline so two manifolds are the only possible so-

The motor can be run on either fuel singly, or on any combination of the two. In fact a proper combination gives more power than can be secured on either fuel alone.

When running on kerosene the gasoline carburetor acts as an auxiliary air inlet.

Frisbie Kerosene Motors run as well on gasoline as our regular gasoline motors. On kerosene they develop just 4.76% less power than on gasoline,—the difference is not even discoverable in ordinary operation.

The kerosene is gasified so perfectly in this motor that there is no extra carbon trouble, and no smoke or odor in the exhaust. Special provision for lubrication over-comes all possibility of oiling troubles.

Compare the prices of gasoline and kerosene in your lo-cality, figure how many gallons you use in a day, a week or a year, and then you can easily see how much a Frisbie Kerosene Motor will save you.



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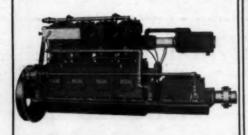
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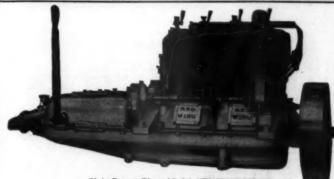
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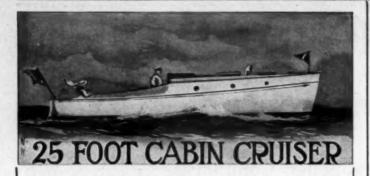
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Grease Cups

For Marine Service

are free from complicated parts; are positive in operation, and will not shake to pieces when placed on vibrating machinery. The high grade materials used, coupled with Lunkenheimer "Quality" workmanship and the rigid inspection which they undergo, insures in them the best the market affords.

The great variety of types made, including Automatic, Screw-Feed and Plain, together with a multitude of other Motor Accessories, are fully described and listed in our Motor Accessories Catalog No. 4. Every motor boat owner should have a copy. Write for one.



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Advertising Index will be found on page 40.



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MOTORS The Motor of Renown

OR clean-cut quality examine the design of the Miller four-cycle engine shown above. You'll Miller four-cycle engine shown above. find the workmanship and materials equal in quality to the design. It is strictly high grade, and modern in every detail.

Simple, Durable, Economical, Efficient

Bosch magneto ignition and Bosch electric lighting and starting system. Furnished for burning kerosene, distillate or other low grade fuels, if so specified in order.

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The 10-in-1 Strainer has ten times as large a straining surface as any other

on account of its large straining surface it is practically impossible to clog up and the sediment it strains out is kept settled at the bottom until drained off, and is not continually stirred up by the passing fuel as in other makes. The large straining surface permits the fuel to pass through rapidly. Sediment drain cock at bottom. Strainer easily removed and cleaned. Retail price, ½ or ¼ inch, \$2.00

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Why run unnecessary risk or deprive yourself of the pleasure of having a perfectly controlled motor boat?

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Years of service on thousands of motor boats have proven Baldridge efficiency. The Baldridge "idles" perfectly. It carries far greater overload than its rated capacity. Gears are completely enclosed and perfectly lubricated.

It has but one main shaft extending from bearing to bearing—and as a consequence the Baldridge is a gear that will not sag, wobble or get out of alignment.

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Light in weight; compact in design; embodies a exclusive features of the two-cylinder type. De 21/4 H.P. Particularly adapted for small boats and compact in the compact in Write for Booklet. Dealers Wan

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All materials fitted-including hardware.

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MARINE MOTORS

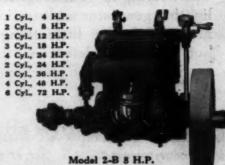
The speediest, most powerful, most compact and most flexible motors ever built. They throttle from 250 to 1,000 r.p.m. in an instant and all you hear is an almost silent hum. Every "ROBERTS" is equipped with our patented Cellular Bypass that prevents backfiring and also thoroughly mixes fuel and air, through hundreds of long, narrow passages, into an explosive charge that spells "power."

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—and have been running on kerosene for years. They are the pioneer kerosene motors—the first two or four-cycle marine motors to operate successfully on this cheap fuel. Decrease in power less than 3%. No carbon deposit. No increase in fuel consumption.

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Made in styles and sizes for every kind of gas, gasoline or oil engine—tractor, truck, marine, stationary or automobile. There is nothing "hit or miss" about these efficient oilers. They are free from complicated mechanism and do not clog up and get out of order.

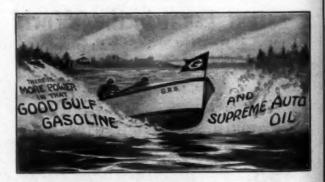
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and cruisers are used by U. S. Government in Life-Saving and Lighthouse service, by foreign governments, by institutions and individuals everywhere. Racinewis is a name backed by twenty-one years of boat building skill. It means speed, power, comfort, safety and dependability in boats.

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SAVES ITS FIRST COST MANY TIMES OVER One coat this Fall keeps out moisture and prevents rot and decay.

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The most powerful Anti-Fouler and Preservative known. No other Bottom Composition has been successful in Tropical waters. It has a wonderful, hard, slippery finish that takes a high polish for racing. It is not a copper paint and is non-corrosive on steel. For top sides, yacht semi-enamel white and gloss black.

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RUNABOUT

OU get every quality you could wish for, a highclass, seaworthy, fast, luxurious and comfortable express runabout—at a price you cannot match elsewhere. Quality is not sacrificed to economy, com-fort is not sacrificed to speed. All these features are balanced and blended into the kind of a boat you have always wanted to own.

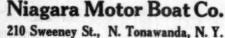
There is no exact parallel for the Niagara idea in the

and uniformity of workmanship are obvious. People do not buy Niagara Runabouts merely to save money. They buy them because the Niagara models satisfy their demands in every detail, and relieve them of the bother, delay and high cost of built-to-order boats. This statement is proved by the fact that many Niagara boats have been purchased by owners with unlimited means. The saving is incidental.

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20'	-	4'6"	with	10-12	H.P.	motor									\$1,300
25	-	8' W	rith 2	0-24 F	LP. n	neter .	 								. 1,600
28"	-	5'6"	with	15-28	H.P.	meter									. 2,400
28		5'6"	with	20-35	H.P.	meter									. 2,600
32"	×	5'6"	with	20-35	H.P.	motor									 . 2,700
32"	*	8'8"	with	30-45	H.P.	meter									2.900

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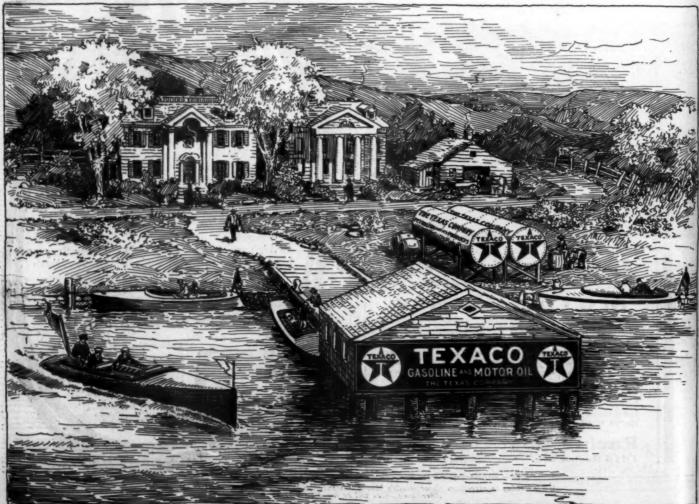


marine industry. After building boats of all types for

many years, we have organized our factory to special-

ize on a few models of similar construction and finish.

Never before have boats of this quality been built in quantity by manufacturers with equal facilities and experience. The advantages of economical production



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Save \$5.00 to \$7.00 a Day on Fuel=

WITH the price of gasoline at its present high level, any man who buys a big engine which uses only this expensive fuel is practically throwing money away.

Get a kerosene engine—a successful kerosene engine that has made good in actual service.

Wright Heavy Duty Marine Engines

Wright Heavy Duty Engines are equipped to use kerosene as well as gasoline, and on kerosene they give fully as much power and use the same number of gallons as on gasoline. Our Kerosene Equipment is perfected to a point beyond improvement.

We use two carburetors, one for each fuel, the fuel being forced to each by pumps and regulated by an overflow which insures a proper supply of fuel regardless of motion of boat.

Kerosene Gasified-Not Merely Vaporized

The kerosene is converted into a perfect gas—not merely a wet vapor—by supplying the kerosene carburetor with hot air and then passing the vapor through a heated generator which gasifies it. This prevents all carbon trouble in the cylinders and on the valves, and gives an exhaust as clear as on gasoline.

A piston type throttle valve, controlled by one lever, enables the operator to change instantly from gasoline to kerosene.

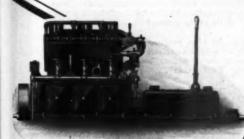
What Several Users Say

"About eighteen months ago, we installed one of your kerosene engines and since then we have been running on kerosene. This reduced our fuel bill about \$5.00 per day and at the present price of gasoline would make between \$6.00 and \$7.00 per day.

"We are pleased to state that we get about the same power from kerosene as we do from gasoline and we have no more trouble with carbon in the cylinders and valves when running on kerosene than we do when using gasoline, nor is our repair bill any higher when using kerosene than when using gasoline."

"We think you have the best kerosene outfit we have seen and we have had over fifteen years' experience in operating gasoline engines and motor boats."

Wright Engines have overhead valves, and are equipped with magnetic make and break ignition, using a Bosch Low Tension Magneto. The spark is advanced or retarded through the magneto, the same as a jump spark system.



3-Cyl. 6 x 7½", 22-30 H. P. 3-Cyl. 7½ x 9 ", 35-45 H. P. 4-Cyl. 8 x 7½", 30-40 H. P. 4-Cyl. 7½ x 9 ", 45-40 H. P. 6-Cyl. 6 x 7½", 45-65 H. P. 6-Cyl. 7½ x 9 ", 70-90 H. P.

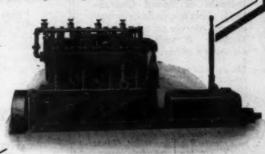
6 x 71/2" runs from 400 to 550 R. P. M.

Write today for full details of this engine

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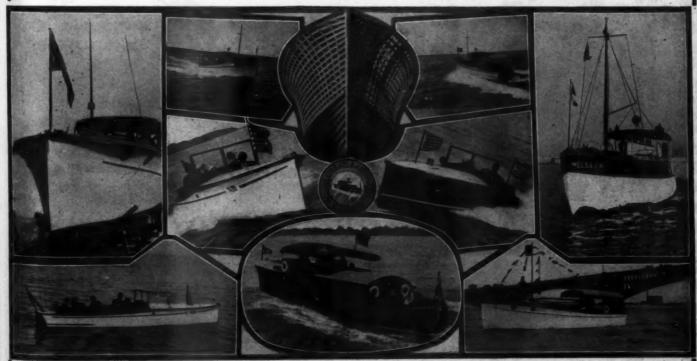
Owensboro, Ky.



Three Cylinder Wright Kerosene Engine

Four Cylinder Kerosene Engine

GREAT LAKES BOAT BUILDING CORPORATION



The shops and yards of this company, the largest and best equipped of their kind in the United States, are devoted exclusively to the construction of stock model and special runabouts

and cruisers of the highest grade. Inquiries should state the approximate size and type required, the number of persons to be accommodated and the speed and delivery desired.

GREAT LAKES BOAT BUILDING CORPORATION

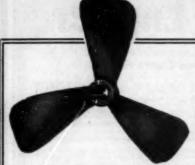
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Race Yourself with a

B & B Propeller



One to Three Miles per Hour Increase of Speed Guaran-teed. This is a definite promise, not merely an advertising alogan. It isn't magic or chicanery either.

Simply this—we've found that the proper B & B Wheel will give one to three miles increase over the average wheel in service, so we're willing to base every sale on the fulfillment of this guarantee.

We take the risk of proving that you need a B&B Propeller. If you don't, we are cheerful losers. Give us the chance to try it.

"The Wheel that Leads" in the United States

We propose a new form of sport for motor boat owners—a sport that will prove as interesting as any race they ever entered. And it will prove the most profitable contest they ever tried for ninety-nine out of every hundred contestants.

Tune up your engine, clean the plugs, adjust the carburetor, fill up the oiler, then go out and make the best time record you can between two known points some distance

Then put on a B & B Propeller of the size and pitch we recommend for your boat. Over the same course, with conditions as near identical as you can make them, this

test will show you how much extra efficiency you get at no extra cost with a B & B Wheel.

B & B Propellers are technically correct, made of the finest materials by a firm of international standing. They are best for launches, speed boats, cruisers, tow boats—all types. The name is stamped on the hub of every genuine B & B Propeller.

Write us a candid letter about your boat, its size, power, revolutions, construction of boat, speed, present wheel equipment, etc. We'll tell you our honest recommendations and send prices without any obligation on your part. Write today.

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Wouldn't you like to have again that snap and smoothness your engine possessed when it was new? There is a feeling of satisfaction about it that is worth even more to the owner than the undoubted gain in efficiency and economy.

Put on a new Kingston Carburetor. Test it out any way you like. If you don't say the Kingston is worth more to you than it costs, the trial won't cost you a cent.

Perhaps your old carburetor isn't worn out, but the grade of gasoline obtainable has changed vastly in the past two or three years. Any carburetor made a few seasons back is

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The new Kingston Carburetor was designed especially for the present-day low-grade fuel. It is the simplest carburetor you could ask for—only one adjustment—and is particularly adapted for marine use. Any novice can keep it in adjust-ment under all changing conditions.

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Write us today for prices, trial offer and guarantes. You can try a Kingston on your engine and if it doesn't give satisfaction we will refund your money. You take no rishs.

If you are getting a new lengine, give it the best carburetion from the first-specify a Kingston

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der and the shot loosely fitting the bore. Your motor is a whole battery of guns and you have to get a full charge, rammed to high compression, with a gas-tight piston to take the full force of the explosion. That calls for

K-P RINGS-THEY SAVE GAS

K-P Rings actually do what all piston rings are intended to do. They give a perfect gas-tight joint between the piston and cylinder all around. This improves the efficiency in every single operation of the motor.

It increases the suction which not only draws a bigger charge of gas, but also vaporizes it more perfectly. It compresses the gas better and transmits more of the energy from the explosion to the crankshaft. It exhausts cleaner and leaves more room for fresh gas. It saves oil, reduces carbon and keeps the crank case and bearings cooler because the gas doesn't blow past the rings.

The K-P has a side-lock and groove. The groove between the outer rings and the inner makes it absolutely compression tight. The side-lock between the two outer rings holds them both in place. Consequently this ring will ride ported engines without pinning.

35 PER CENT OF GASOLINE SAVED

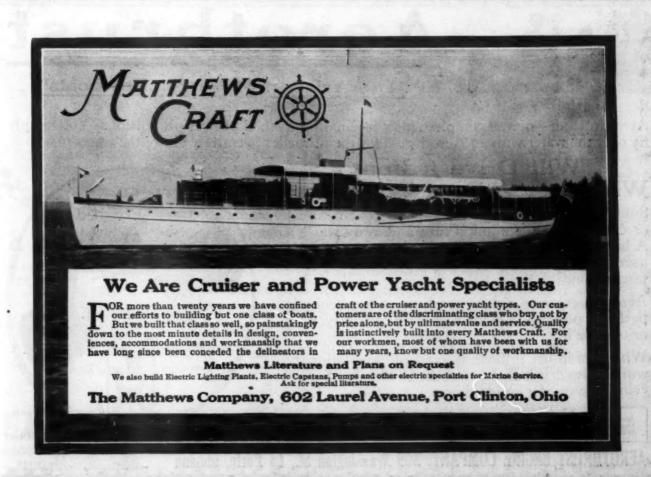
K-P Rings average 35% saving of gasoline, 25% more power and 25% more speed for ordinary engines. Unless your engine is in unusually fine condition, you can expect the same results. You can quickly figure how soon they will save their cost.



Write today for "Economy and Power." It tells all about K-P Rings. They cost less than others. Don't neglect to find out about them.

KEYS PISTON RING CO.
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The De Luxe Productions of the U-Bottom Type

CKLEY Boats are in a class by themselves when it comes to V-Bottom craft of high-grade construction, up-to-the-minute design and luxurious finish. Although we build boats of all sizes and types up to cruisers 50 feet long, Sea-Going V-Bottom Runabouts are our specialty and we acknowledge no superior in this line.

Ackley Runabouts, from 16 to 30 feet in length, are among the fastest boats of their size on the market. And it is correct design, not unduly light construction, which makes them so fast.

They are as staunch and seaworthy as any pleasure boat can be built. Designed strictly for rough water use, with high free board and a type of underbody which prevents pounding and rolling. Speeds up to 35 M.P.H., depending upon power plant used.

Comfort, safety and the honest pride of owning a su-

perior boat are the advantages enjoyed by the owners of these runabouts. Hulls are finished with eight coats, and may be had in tan, lavender, lemon, wine, black, white, etc., the same as high-grade automobiles. Planking is treated with a solution that insures against rot and plant life, and we use a special surface filler that guarantees a permanent high-grade finish. White oak is used exclusively for our frames.

We also build hydroplanes, canoes, rowboats, folding portable boats, boat frames, planked hulls and cruisers for southern waters.

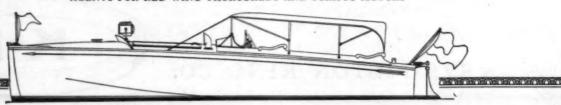
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CINCINNATI, OHIO

AGENTS FOR RED WING THOROBREDS AND SCRIPPS MOTORS





Aerothrust

"The Aviation Motor for Rowboats"

Aerothrusting—newest, simplest, most fascinating method of boat propulsion. You simply fly over the water with an Aerothrust, for the propeller is entirely above the water—

Will Drive a Boat Wherever a Boat Will Float

Simply clamp this aviation motor to your rowboat or canoe—give the crank a turn and away you go. A big, proven success for three years—hundreds of users testify to Aerothrusting's practicability and fascination.

Aerothrust burns either gasoline or kerosene; is perfectly portable; a woman or child can carry, start or operate it.

When not in use in boat, is available for stationary work—also drives sled or iceboat in winter. A marvelous motor of a hundred uses.



Complete with high tension Magneto—the 1916 model is a wonder. Write today for illustrated booklet

AEROTHRUST ENGINE COMPANY, 309 Washington St., La Porte, Indiana



1916 Model High Tension Magneto METROPOLITAN

AIR GOODS (



"Neptune" Yacht Mattress

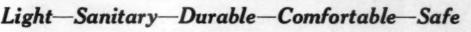


"Zenhve" Air Cushion

Proceeding on the theory that the man who has the discrimination to provide his motor boat or yacht with air cushions and mattresses wants the best to be had, we have produced under the name of Metropolitan Air Goods the best made and most durable line that brains and experience can manufacture.

Metropolitan Air Goods insure the highest degree of comfort. The peculiar patented construction not only makes them last longer and keep their shape better but it also eliminates the "rolling" feeling of ordinary air mattresses. Built to wear like iron and last indefinitely with ordinary care.

For use as life preservers these cushions are invaluable to have about the boat. For this reason alone they are the only kind of mattresses that should be used on a motor boat.



Write today for complete illustrated catalog and prices. All sizes and styles in stock patterns also made to order from your own patterns to fit your boat.

We also carry a complete line of leather covered, "No Sink" KAPOC FLOSS CUSHIONS, CORK and PNEUMATIC GOODS for every purpose.

Athol Mfg. Co., 71 Chestnut Hill Ave., Athol, Mass.



Double "Zephyr" Cushion



The web stays sewed to the top and bottom are covered by exclusive patents owned by this company.

"Distamosus."

HERE is a marine engine of the highest quality—one that will successfully meet every requirement that you may demand. It means satisfaction in both power and operating expense—for the Automatic is as nearly mechanically perfect as it is possible to make an engine.

It is responsive; it has ample reserve power; and whether you have the throttle wide open or shut down to the slowest speed, you know that your engine will run hour after hour without the slightest hitch. It has bearings that are made of special bronze, and these are not only adjustable but also removable. It has large valves; an enclosed lubricating system; an enclosed governor; a combination intake and exhaust manifold that assures perfect combustion.

Built in sizes ranging from 30 to 150 H.P., with four or six cylinders, the **Automatic** is suitable for any yacht you may have. Let us send you full information.

The Automatic Machine Co. BRIDGEPORT, CONNECTICUT



Kerosene as a Fuel for Marine Motors (Continued from page 54)

Miller

Certain special devices incorporated in the construction of Miller motors, mannfactured by the Miller Gas & Vacuum Engine Co., of Chicago, Ill., make them adaptable to the use of kerosene, distillate or other low-grade fuels, but the mannfacturers do not feel themselves at liberty at this time to disclose the nature of these devices. The photograph on page 10 shows the latest four-cylinder 6 x 9-ind. Miller motor, which is suitable for use in runabouts of 20-foot length as well as the heavier types of cruisers and work boats. The cylinders of the en bloc type, with removable head, and the flywheel, reverse gear and all other moving parts are fully enclosed. The motor as shown is equipped with a Rayfield carbureter.

The Missouri Engine Co., of St. Louis, Mo., manufactures a line of contractions.

Missouri

The Missouri Engine Co., of St. Louis, Mo., manufactures a line of engines in several sizes which have been sold extensively abroad where gasoline has long been sold at an alarming figure. We are informed that no special attachment required to make the Missouri gasoline engine adaptable for kerosene, the Schehler Model E carbureter being generally fitted by the maker. This in connection with the hot air drum around the exhaust pipe and a metal hose connection to the air intake has given excellent satisfaction.

intake has given excellent satisfaction.

Red Wing

The kerosene-burning attachment used by the Red Wing Motor Co., of Red Wing, Minm., consists of a special exhaust manifold which has the gas passages as ararnged as to form a continuous passage around the entire exhaust manifold, thus bringing the kerosene vapor to a high degree of heat before it enters the cylinders. The Model R Schebler carbureter is used in connction with the kerosene-burning attachment, the single instrument being used for either gasoline or kerosene; only the adjusting cap is changed when switching from one fuel to the other. A water valve is furnished if desired, but it is stated that carbon deposits in the cylinders are reduced to a minimum owing to the perfect combustion of the kerosene.

Regal

One of the illustrations on page 10 shows the arrangement for burning kerosene.

One of the illustrations on page 10 shows the arrangement for burning kerosene, used on the 50 h.p. heavy-duty motor of the Regal Gasoline Engine Co., of Coldwater, Mich. In this motor all the air going to the carbureter is preheated by taking it around the exhaust manifold. The amount of heat obtained from this method is sufficient to make the intake, after it leaves the carbureter, so warm that the hand cannot be held upon it. This heat, it is declared, is more than sufficient to completely vaporize the kerosene and keep it in that state until it reaches the cylinders. The carbureter is a double one, having one bowl for kerosene and the other for gasoline. By the throwing of a lever which is placed conveniently at the front of the forward cylinder, the engine can be instantly changed from operating on kerosene to operation on gasoline or vice versa. The engine must be started on gasoline, but it is stated that it can be changed to full load operation on kerosene within two minutes and a half. A small water carbureter is also attached to the intake pipe.

Roberts

The Roberts Motor Mfg. Co., of Sandusky, O., announces that for the past six months every motor of its manufacture has been run in, limbered up and tested with kerosene as a fuel. Owing to various internal refinements together with the Roberts patented cellular bypass, all of these motors run and develop their full rated horsepower on kerosene, it is stated. No special carbureter and no additional appliances are necessary except the installation of a small auxiliary tank for gaseline on which to start and stop. While the motor is declared to run efficiently on kerosene alone, the manufacturer suggests the use of a mixture of three parts kerosene and one part gasoline, as this amount of the lighter fuel will have a tendency to keep the motor clean and reduce the kerosene odor.

Scripps

The kerosene device used in the Series B Scripps motors, manufactured by the Scripps Motor Co., of Detroit, Mich., consists first of a single manifold containing both intake and exhaust passages which replaces the standard water-jacketed manifolds used in this company's gasoline motors, and second a carbureter of special design which has been developed after many years of experimentation. The manifold, or vaporizer as it is called, is designed with a series of cast pins located within the intake passage and staggered so as to thoroughly break up the incoming mixture. These pins carry the heat from the outside walls to the center of the passage, and it is claimed that it is impossible for any liquid fuel to pass them. The carbureter does not differ materially in its appearance from the average float feed carbureter, but it is fitted with a venturi and a metering valve so designed as to eliminate flooding at low speeds and to give an unusual acceleration. The Scripps company has been marketing convertible gasoline-kerosene motors for several years and has never found it necessary to use water injection.

Twentieth Century

Unusual success, it is declared, has attended the efforts of the New York Yacht, Launch & Engine Co., of Morris Heights, N. Y. City, in its experiments with kerosene. It is now equipping its Twentieth Century motors with a kerosene attachment which is declared to operate with but little loss of power and with no noticeable carbonization. The vaporizing device used by this company consists of a vertial chamber set into the exhaust manifold between the two blocks of cylinders in the four-cylinder models. Sixteen tubes of a heat-conductive metal are incorporated within this upright cylinder, and through them the kerosene passes from the carbureter on its way to the intake manifold. In operation the hot exhaust gases pass around the tubes, heating them thoroughly and vaporizing the kerosene.

Universe.

Universal

The Universal Motor Co., of Oshkosh, Wis., is now using the simple device shown in the line cut on page 11 by which Universal motors may be operated on kerosene. As will be noted, a hot air drum is attached around the exhaust pipe and connected by a flexible tube to the air inlet of the carbureter so that the kerosene may be warmed and vaporized on its way to the cylinders. The inlet manifold is situated directly below the exhaust manifold so that this passage is kept at a high temperature at all times. A further advantage of the Universal for kerosene use is that the cylinder head may be removed with little trouble should it be necessary to clean out the combustion chambers at any time.

Van Blerck

Van Blerck

After several months of experimentation, Joe Van Blerck, of the Van Blerck
Motor Co., Monroe, Mich., has hit upon a kerosene contrivance which is declared
to give unusual satisfaction in connection with Van Blerck motors. Instead of
one carbureter two model L Scheblers are used and one of these is fitted up with a
water valve for injecting a spray of water into the cylinder. Another part of the
kerosene arrangement consists of a specially designed "stove" on the exhaust pipe
from which a steady flow of extremely hot air is obtained. With this outfit attached
to any standard model of the Van Blerck engine, the company will guarantee the
regular rated power on gasoline and only a thirteen per cent. loss on kerosene, while
it is stated that the flexibility of the motor has not been impaired in any way.

Wolverine

The Wolverine Motor Wks., of Bridgeport, Conn., has been building heavy-duty
marine engines for nearly a generation, and it is stated that this experience has
resulted in bringing to perfection a full line of heavy-duty Wolverine motors which
successfully use various oil fuels, including kerosene, gasoline, alcohol, distillates
and in fact all liquid fuels which flash at 150 degrees F. and which are free from
tar residue. An attractive feature about these engines in their use of kerosene,
aside from economy and fuel bills, is stated to be the great flexibility with which
they are handled. The kerosene device is not a separate attachment, but is built
on to and is a part of the engine.

Wright

Wright

Wright

A feature of the Wright marine engines upon which particular emphasis is laid by the Wright Machine Co., of Owensboro, Ky., is that the kerosene fuel is gasified instead of being vaporized. These engines are fitted with two carbureters of the concern's own make which have overflow chambers maintaining the fuel, both kerosene and gasoline, always at the same level. They do not depend on any float operation, the fuel being pumped up and the surplus continually overflowing through the return tube. By this means it is stated that every cylinder gets the same mixture at all times regardless of the height of the fuel in the task or the motion of the boat. A feature of the Wright kerosene device, in addition to the hot air supply pipe, is the use of a generator inside of the exhaust manifold. The vaporized kerosene is sucked through this generator where it is converted into a dry gas and is then sucked through a throttle valve into the intake manifold and the each cylinder. Separate carbureters are used because of the fact that the needle valve regulation is different with kerosene and gasoline. The Wright engines sure also fitted with a water atomizer which is a separate attachment and is regulated by a needle valve and automater air intake valve. The water permits of a high compression without preignition. But one throttle is used, this being so arrange that the gasoline is shut off as the kerosene is turned on.

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Electricity for the Motor Boat, Sailing Yacht and House Boat

Your electric lighting plant should be as dependable as your power plant.

It should be complete and compact—and should require little or no attention.

Delco-Light is a practical electric plant for the motor boat, sailing yacht, house boat or summer home.

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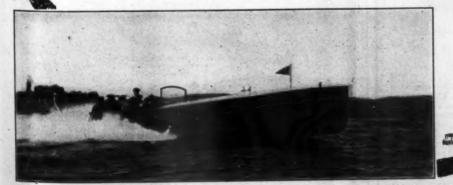
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Ericsson Mfg. Co., Buffalo, N. Y.

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Assuring you of our very highest regard for your magneto, we remain,

Yours very truly, The W. H. Mullins Co.

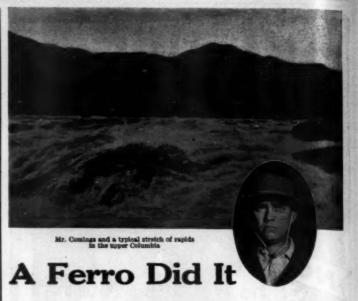
Even if the Berling does cost more, it is worth more. Its one-piece frame protects the working parts from water and oil-without sacrifice of accessibility. Advanced or retarded, the Berling's spark never misses an explosion-it is always fat, hot, sure.

Almost any marine-motor manufacturer will furnish a Berling Magneto without extra charge. Ask for it on vour new marine-motor and be assured of that perfect and maximum ignition-service you desire.

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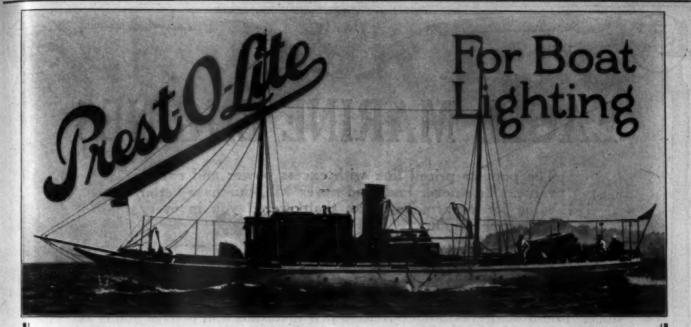
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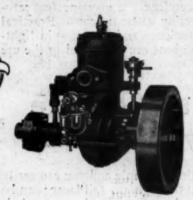
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The popular priced line with excess power and excess value. You never had, and never will, purchase better value for your money than that offered you in every "EAGLE" Engine.

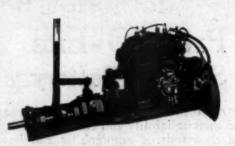
DO NOT PROCRASTINATE

1916 promises to demand more engines than there are facilities to produce. Manufacturers cannot purchase raw materials and deliver goods as promptly as in the past. There has been an evolution in business, resulting from enormous demands for all kinds of products, with the result that to go in the market today and attempt to secure supplies is almost impossible. Therefore, arrange for your engine requirements early, and be sure to arrange with a manufacturer who is likely to render you satisfactory service. You will find it more important than ever this year to use discrimination as to your source of supply.



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We have a large and varied line to choose from. Our popular-priced high-speed Models have no competition. They are in a class by themselves. They hold all records for speed and horsepower development and their construction is of surpassing quality.

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The Heavy Duty "EAGLE" Engine, for work boats and auxiliary purposes, cannot be improved upon. There are engines of this type in service that have been used continuously for 16 years, which is sufficient evidence of their value.

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Your boat will never grow old and dull looking if you keep the varnished and enameled parts polished and cleaned with Liquid Veneer. The woodwork will remain just as glossy and brilliant as new and will not have to be refinished so often.

Boat owners who have tried Liquid Veneer will never be without it. It instantly removes all dirt and spots, obliterates scratches and mars and imparts a wonderful polish—all in one simple operation. It is quickly and easily applied with a Dust Cloth and requires but very little rubbing.

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You can go into any grocery, drug, hardware, paint or furniture store and find Liquid Veneer on sale—pushed and recommended as THE GREATEST POLISH AND CLEANER THE WORLD HAS EVER KNOWN.

Liquid Veneer is perfectly safe to have around. It is non-inflammable and non-explosive. It is not oily or greasy and cannot soil the clothing.

Take advantage of this

Special Trial Offer

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2616.00 18.00	26 22.40	24.20	1913.50 14.80
2718.40 20.40	27 25.60	27.60	20 15.00 16.30
2820.00 22.00	28 27.20	29.20	21 16.50 17.90
3026.40 28.60	30 34.40	36.60	22 18.00 19.50
3230.40 32.80	32 41.60	44.00	23 21.50 23.10
33 33.60 36.40	33 44.80	47.60	2423.00 24.70
3435.20 38.00	34 47.20	50.00	The New Jones II
3537.60 40.80	35 50.40	53.60	The No-Weed Propeller is
3638.40 41.60	36 52.00	55.20	made in the two blade style only
3846.40 51.20	38 62.40	67.20	and in pitch ratios of 1 to 1 and
4060.00 65.60	40 78.40	84.00	1 to 11/4.
10 2 - 10 10 10 10 10 10 10 10 10 10 10 10 10	42 88.00	96.00	When buying a HYDE pro-
If bored propeller is required,	44100.80	109.60	peller, look for the trade mark or
give size of bore and state whether	46120.00	129.60	the hub to be sure of the genuine
straight or taper. If taper, give	48 140.00	151.20	If unable to secure a HYDE in
size of bore at large and small end	50156.00	168.80	your locality, order from us direct
and length of hub. Use Associa-		100.00	E HVDE "
tion standard taper if possible. Also give size of keyway.			Every HYDE propeller is guar- anteed against breakage.

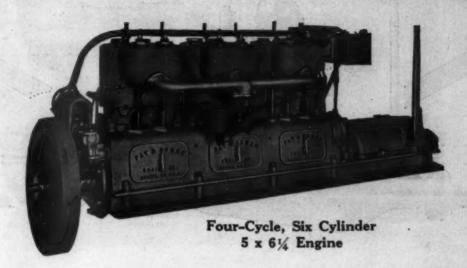
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TWO BLADES				THREE BLADES				
Dia.	Not Bored and Bored Keyseated	Dia. Not Bored	Bored and Keyseated	Dia.	Not Bored	Bored and Keyseated	Dia. Not Bored	Bored and Keyseated
8"	.\$1.46 \$2.06	23"\$9.75	\$11.03	8"	. \$1.79	\$2.39	25" \$16.90	\$18.50
9	1. 179 . 12.39	24 . 2 10.40	11.76	9	2.11	2.71	26 18.20	20.00
10	1.95 2.55	2512.03	13.63	10	2.28	2.88	27 20.80	22.80
11	2.28 2.96	2613.00	14.80	11	3.09	3.77	28 22.10	24.10
12	2.47 3.15	2714.95	16.95	12	3.58	4.26	30 27.95	30.15
13	2.93 3.61	2816.25	18.25	13	4.23	4.91	32 33.80	36.20
14	3.12 . 3.80	3021.45	23.65	14	4.55	5.23	33 36.40	39.20
15	3.41 4.21	3224.70	27.10	15	5.53	6.33	34 38.35	41.15
16	4.23 5.03	3327.30	30.10	16	6.18	6.98	35 40.95	44.15
17	4.88 5.76	34 28.60	31.40	17	6.83	7.71	36 42.25	45.45
18	5.36 6.24	3530.55	33.75	18	7.48	8.36	38 50.70	55.50
19	6.50 7.54	3631.20	34.40	19	8.78	9.82	40 63.70	69.30
20	7.15 8.19	3837.70	42.50	20	9.75	10.79	42 71.50	79.50
21	8.13 9.25	4048.75	54.35	21	10.73	11.85	44 81.90	90.70
22	8.78 9.98			22	11.70	12.90	46 97.50	107.10
				23	13.98	15.26	48113.75	124.95
				24	14.95	16.31	50126.75	139.55

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